MAY 30 1947

THE HORSELESS CARRIAGE CLUB

GAZETTE

FOUNDED NOVEMBER 14, 1937, LOS ANGELES, CALIFORNIA

VOLUME 8 JUNE 1946 NUMBER 2

ARTHUR TWOHY WITH HIS 1906 BUICK TWO-CYLINDER.

SEE PAGE 3.

THE HORSELESS CARRIAGE CLUB

Founded in Los Angeles - November 14th, 1937

A non-profit corporation founded by and for Automotive Antiquarians and dedicated to the preservation of the old time automobiles together with their accessories, archives and romantic lore.

OFFICERS

STEADMAN G. SMITH, *PRESIDENT*
BEN L. SHARPSTEEN, *CHAIRMAN, BOARD OF DIRECTORS*
LINDLEY F. BOTHWELL, *FIRST VICE PRESIDENT*
ALFRED S. LEWERENZ, *SECOND VICE PRESIDENT*

HERBERT ROYSTON, *SECRETARY-TREASURER*
P. O. BOX 503, WEST LOS ANGELES 25, CALIFORNIA.

DIRECTORS

LINDLEY F. BOTHWELL,
CLAY CLABERG,
LOUIS COMBS,
ALFRED S. LEWERENZ,
TOM MATHEWS,
W. EVERETT MILLER
ROBERT B. OLIVER
A. L. POULEUR,
HERBERT ROYSTON,
DR. GEO. E. SHAFER,
BEN L. SHARPSTEEN,
O. J. SMITH,
STEADMAN G. SMITH,
ARTHUR E. TWOHY,
KARL WEBER,

EXECUTIVE COMMITTEE

LINDLEY F. BOTHWELL,
ALFRED S. LEWERENZ,
HERBERT ROYSTON,
BEN L. SHARPSTEEN,
STEADMAN G. SMITH,
ARTHUR E. TWOHY,

OFFICERS, ST. LOUIS, MO., REGIONAL GROUP.

A. H. DEEKEN, *DIRECTOR*, FRANK H. STEWARD, *ASSISTANT DIRECTOR*,
WAYNE BLEDSOE - *SECRETARY-TREASURER.*
8030 Troost Ave., Affton 23, Mo.

MEMBERSHIP FEES

Active membership for those in Southern California only, $5.00 initiation fee which includes first year's dues. $2.00 per year thereafter. Associate membership for those outside of Southern California $2.00 per year and no initiation fee. Both classes of membership include the Gazette and privilege of advertising automobiliana wanted, for sale, or to trade. Unique Certificate of membership, suitable for framing, free to new members.

CLUB EMBLEM

The supply of Club Emblems has been exhausted. A new supply of better quality, heavy brass with baked enamel colors, has been ordered and will be available about September 15th.

THE HORSELESS CARRIAGE CLUB GAZETTE

Official Publication of The Horseless Carriage Club.

EDITORIAL COMMITTEE

Ben L. Sharpsteen, *Chairman.*

Douglas Bothwell, Herbert Royston,
W. Everett Miller, Arthur E. Twohy,

THE GAZETTE'S COVER.

On the cover of this issue of The Gazette is pictured Arthur Twohy and his 1906 Buick two-cylinder touring car. Art was one of the organizers, and the first president, of The Horseless Carriage Club. His interest in antique automobiles dates back to about 1920 when an automobile show burned up in Los Angeles and the Packard Company lost a valuable antique model. Art figured that a collection of old cars would be a worthwhile investment with steadily increasing value. His judgment was apparently sound because he has received some high prices for cars sold during the past few years.

For several years Mr. Twohy rented cars to the movie studios. The Buick pictured on the cover was used in the picture "Cimarron" in which Art doubled as renter of the car and an actor in the film. While he has disposed of some of his cars, he still has quite a collection including a 1903 Haynes-Apperson, 1912 Cadillac Coupe, 1915 American Underslung, 1910 Franklin Roadster, and others. If you are in the market for an antique car contact Art. Many of his are for sale. Address 400 N. Kenmore Ave., Los Angeles 4, Cal.

Articles appearing in The Horseless Carriage Club Gazette, contributed by members, express the individual opinions of the writers, and are not necessarily the opinions of the Editors. Permission is granted for reprinting articles appearing in this issue if credit is given to The Horseless Carriage Club Gazette.

BACK NUMBERS

Prices of back numbers of the Gazette to members.

Volume 1, Number 1, Mimeographed Reprint	$1.00 ea.
Volume 1, Numbers 2 and 3	.75 ea.
Volume 2, Numbers 1, 2 and 3	.50 ea.
Volume 3, Numbers 1, 2 and 3	.50 ea.
Volume 4, Numbers 1, 2 and 3	.50 ea.
Volume 5, Numbers 1, 2, 3, and 4	.50 ea.
Volume 6, Numbers 1, 2 and 3	.50 ea.
Volume 7, Numbers 1, 2 and 3	.50 ea.
Volume 8, Numbers 1, and 2	.50 ea.

Send orders for the Gazette to HERBERT ROYSTON P. O. Box 503, West Los Angeles 25, California.

OUR NEWEST DIRECTOR CONFESSES TO A ONE TIME MANIA FOR SPEED. IN HIS OWN WORDS KARL WEBER TELLS OF THAT MEMORABLE RACE BACK IN 1915.

KARL WEBER SEATED BESIDE THE DRIVER.

The story on the 1915 Ford Race is as follows: Someone conceived the idea of a Ford "Scramble", which was to be a ten mile race at Old Ascot Park on Christmas Day, in which only Ford Cars could compete.

Approximately 25 entered, some good and some bad.

We had a geared-up end with a 3 to 1 ratio, and a stock Model "T" motor exceot that it was finely balanced with aluminum pistons, etc., oil scoops on the con rods, high compression, high-tension magneto and a hopped-up carburetor. The car would do about 68 miles per hour.

After we were satisfied that the car was O. K., I went up to Ascot every morning about 7:00 o'clock when no one else was there and tried to make 10 miles. For a week straight I could never make 10 miles- I would make anywhere from 6 to 8 miles when the right front wheel bearing would go out.

The night before the race we got hold of a pair of Timken bearings and put them into the race without trying them out.

There were 25 starters - about 5 finishers - and we finished a lap ahead of the second car at an average of 60 miles per hour. As I recall, it was exactly 10 minutes for the 10 miles from a standing start.

The Ford people gave us the first prize which was a brand-new Ford open Touring Car.

KARL WEBER

AND SPEAKING OF RACES -

Our Dr. George E. Shafer (center) is flanked on the left by the famous Barney Oldfield and on the right by Bruno Siebel (The Flying Dutchman). It will be remembered that he was Barney's mechanic. This famous team toured the country - Barney in his Green Dragon and Bruno in his Red Devil, giving many of us long to be remembered thrills.

The occasion - Horseless Carriage Club Meet at the Automobile Club of Southern California.

Seventh Annual Show of the Automobile Club of America.

(1906)

Opening of the Show.

The seventh annual Automobile Show of the Automobile Club of America opened at the Grand Central Palace, Lexington avenue, between Forty-third and Forty-fourth streets, New York city, on Saturday, December 1. The Show was opened for a private inspection by club members at 4 o'clock p. m., and to the general public at 8 o'clock p. m. This is the second automobile show to be held in the Grand Central Palace, the first one having been held there by a private promoter in November, 1900, and it is, perhaps, illustrative of the growth of the automobile industry that, while in 1900 the few cars exhibited were almost lost in the big building, and there was plenty of room to show vehicles in motion, now every nook and corner is utilized for exhibition purposes, and every stand is more than usually crowded with exhibits. This comparison, however, does not take account of the fact that the present show is backed by two powerful organizations, the Automobile Club of America and the American Motor Car Manufacturers' Association, while the show of 1900 was a privately conducted affair and a rival of the Automobile Club Show of that year.

In one respect the Palace is not a very suitable building for a show of this kind, as it does not contain a single immense hall, like most other buildings used for automobile show purposes here and abroad, and one is, therefore, not able to survey the whole of the exhibit from some elevated point in the gallery. However, from a practical viewpoint, the building lends itself very well to the purpose, and the management has succeeded in effectively carrying out a simple yet pleasing scheme of decoration. Gray, green and brown are the basis of the color scheme. The floor is laid with a covering in brown, in imitation of a dusty highway, and a soft gray for the columns and panels gives a fleecy cloud-like effect. The signs are uniform, moderate in size, and in green lettering on a white background.

When the Show was opened to the public on Saturday evening it presented an aspect of almost perfect completeness, although a walk through the hall revealed a stand here and there that was yet bare of exhibits. In this respect the Show compares very favorably with that held by the Automobile Club in the Sixty-ninth Regiment Armory last year, at which, owing to extensive constructive work necessary before the exhibits could be installed, it was impossible to get ready in time for the opening. The one impression that forces itself upon the mind as one strolls through the halls and galleries is that the entire building is very closely packed with exhibits, and that the individual exhibitors have been closely limited in the amount of space allotted to them. According to the Show management the building contains 55,000 square feet of floor space available for exhibition purposes, which is occupied by 230 exhibitors. Limitations of space had made it necessary to turn away a number of applicants, and to cut down the allotments of others.

Complete cars and motor cycles are exhibited by ninety-four manufacturers or agents. Seventy-three of the makes shown are American, fifteen French, three Italian, three English, two German and one Swiss. The foreign car is probably proportionately

GENERAL VIEW OF A SECTION OF THE SHOW.

The illustration shows the scheme of decoration, as well as the crowded condition of the stands.

better represented at this than at any former show. This is easily accounted for by the fact that the agents for foreign makes place their cars mostly among the wealthy classes of New York city, which are very strongly represented in the Automobile Club of America, and which may therefore be counted upon to visit this Show. The American cars exhibited are entirely the product of manufacturers outside the Selden combine. Some of the manufacturers represented are members of the American Motor Car Manufacturers' Association, which organized the Show jointly with the Automobile Club of America, while others are not. The large number of complete car exhibitors shows that practically all independent manufacturers of note are exhibiting, and the considerable interest in the Show is thought to be largely due to the early date, and to the fact that the excess profits are distributed among exhibitors on a pro rata basis. Several new ideas for the convenience of exhibitors and visitors are being carried out by the show management, as announced in our last issue.

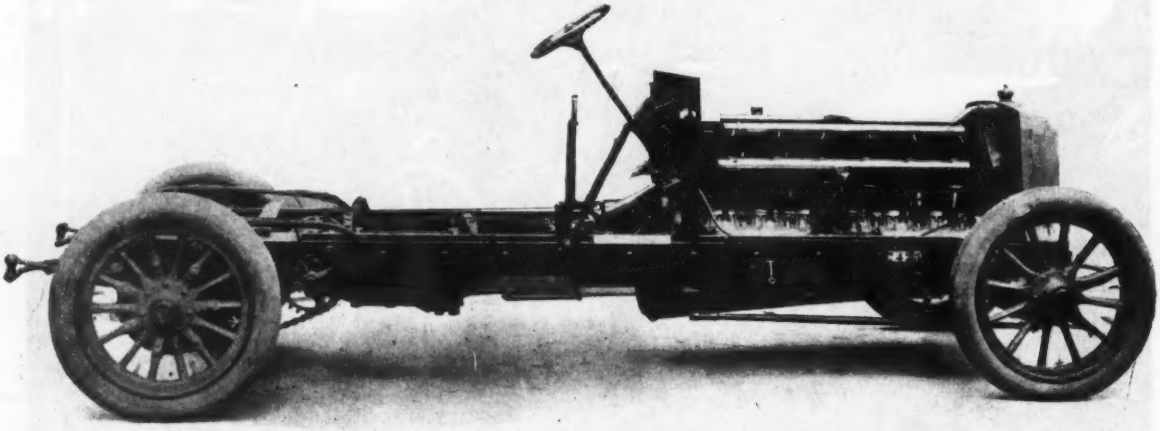
The main floor of the Palace is devoted entirely to the exhibition of complete cars, and the overflow of complete car exhibits, consisting to some extent of commercial vehicles, is relegated to the second floor, where the parts exhibits are also installed. On the top floor of the building there is an exhibit of balloons and airships by the Aero Club of America, which seems to be allied with the Automobile Club of America. A special attraction of this "side show" is the balloon "United States," with which Lieutenant Lahm recently won the Gordon Bennett international aeronautical prize. There are a number of other balloons and airships which have been frequently mentioned in the public press, and which will, no doubt, prove a strong drawing card to the general public.

According to a count the automobile section on Saturday night contained 224 complete cars and chassis, and the number will, no doubt, grow to almost 250 before the week is up. We expect to print complete statistical material of the Show in our next issue. At a visit on the opening night it seemed to be difficult to discover any pronounced novel tendency in the cars shown. It is true that there are quite a number of six cylinder cars; still there are not many more of this class than were exhibited last year. The six cylinder "Compound" of the E. H. V. Company and the eight cylinder of the Nordyke-Marmon Company are original creations that are exhibited for the first time. The two cylinder, two cycle Atlas runabout is another novel creation. The large number of closed vehicles shown is a feature of the exhibition. It is noteworthy that, although manufacturers of low priced cars are certainly more numerous among the independent than among the licensed manufacturers, very few really low priced cars are exhibited, and aside from the Holsman and the Ford four cylinder runabout there seems to be nothing at $650 and under. Of course, these lower priced vehicles are mostly made in the Middle West, where they also find their greatest market.

A considerable number of cars of American make are here shown to the public for the first time, including the productions of the Abendroth & Root Manufacturing Company, American Motor Truck Company, Commercial Truck Company of America, Detroit Automobile Manufacturing Company, Craig-Toledo Motor Company, Moore Automobile Company, Pennsylvania Auto-Motor Company, Aerocar Company, American Machine Manufacturing Company, Conover Auto Company, De Luxe Motor Car Company, Dragon Automobile Company, St. Louis Car Company and Triumph Motor Car Company. Of these cars the De Luxe is an expensive and luxurious model, while most of the rest fall in the medium priced class. Many of them are largely assembled from standard parts, while others are produced by designers responsible for other well known cars on the market, so that, although there is no lack of new cars, really new ideas are not particularly numerous. At least this is the impression received after a first night's visit. Our present issue contains brief descriptions of practically all the exhibits and enumeration of improvements in stock cars already familiar to the motor public.

Complete chassis, either highly finished for show purposes or in the state of finish in which they are delivered to the public, are seen on almost every stand. The practice of mounting these chassis on a plate glass glass mirror on the floor, so that visitors can see the under sides of parts without stooping down or craning their necks, seems to be losing popularity, however. These plate glass mirrors are quite expensive, and as they are quite frequently broken their advantage does not appear to warrant the cost, in the opinion of the exhibitors. There is now generally very little in a chassis that cannot be seen and understood from the top, and, moreover, an idea of this kind seems to lose much of its value after the novelty has worn off. Large sums are spent by some firms in brightly finishing complete chassis, and these chassis generally are a centre of attraction; but some of the best known firms—Panhard-Levassor, for instance—continue to exhibit their chassis in the natural form. High powered runabouts, sometimes of somewhat extravagant form, are seen in considerable number. The practice of exhibiting purely racing cars seems to be declining more and more, and not a single well established manufacturer exhibits a racing car at the Palace, the only racer there shown being by a firm which has only been recently established, and which was unable to get its stock cars to the building for the opening of the Show.

All three motive powers are represented, the White Sewing Machine Company having a very extensive exhibit, considering the space at their disposal, in one corner of the main floor; other steam vehicles are shown by the Lane Motor Vehicle Company and the Johnson Service Company, while electric vehicles are shown by the Lansden Company and others.

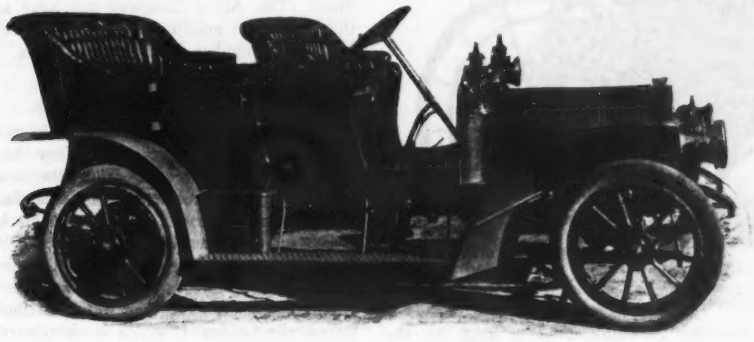


CHASSIS OF PANHARD SIX CYLINDER CAR.

Complete Car Exhibits.

PANHARD & LEVASSOR,

1881 Broadway, New York, exhibit five cars, including two exhibition chassis, one with six and one with four cylinder motors. The six cylinder engine has separate cylinders, with integral water jackets. There is a trunk inlet pipe of copper tubing connected closely with each inlet chamber, and with the governor by a single pipe entering the trunk inlet at the centre. The exhaust gas passes through a very large pipe running alongside the exhaust chambers. The motor is governed by water pressure from the circulating system, acting on a diaphragm connected with the throttle, and the governor can be cut out partially or wholly at will. A pressure gauge on the dash shows the pressure in the cooling system. The valves are on opposite sides of the motor. The gear box is of quite massive construction, and so near the rear axle as to excite wonder as to why the drive was not made by propeller shaft instead of by side chains.



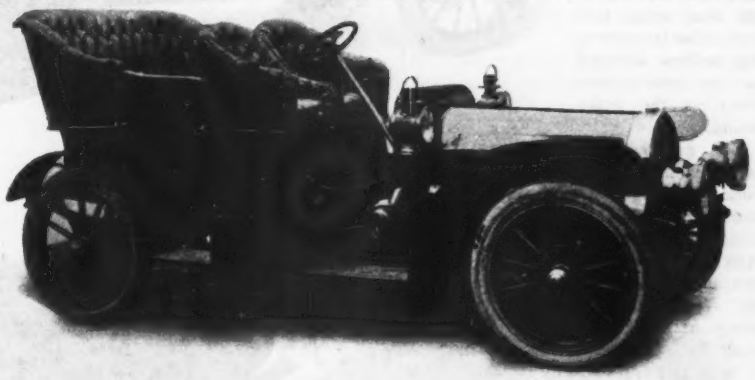
1907 CRAWFORD TOURING CAR.

THE CRAWFORD AUTOMOBILE COMPANY

exhibit two of the few side chain driven American cars. Both of these are touring cars, with specifications as follows: Model E, driven by a 4½x5 inch, four cylinder, vertical motor, rated at 35 horse power, with 1¾ inch mechanically operated valves; weight, 2,400 pounds; 106 inch wheel base and 32x4 inch wheels. Model F, driven by a 5x5½ inch 50 horse power motor, with 2 inch mechanical valves. It has a 118 inch wheel base and 34x4½ inch tires. Both models are similar in mechanical construction, and have multiple disc clutches, steel on bronze, selective sliding gears, giving three forward and reverse, with very large inspection holes in the top of the cases; double universal joints between motor and change gear; pressed steel frames and semi-elliptic springs, front and rear. All shafts are on annular ball bearings. The front axles are tubular. The emergency brake hand levers are inside the frame, giving a direct pull, and act on rear hubs. There is a pedal brake on each part of the countershaft. The chain struts have ball bearings at their front ends. The floor under the front seat is dropped to give room for a suit case. In Model F, which is a seven passenger car, there is a swell in the lower part of the tonneau just back of the door, which gives more leg room crosswise of the body. The exhibit also comprises a polished change gear.

JACKSON AUTOMOBILE COMPANY,

of Jackson, Mich., exhibit five cars. One of these is a Model C, chain driven, detachable tonneau car, with 20-24 horse power opposed motor, with valves in the head, under the body. It has a 96 inch wheel base and 32x3½ inch wheels. The springs are semi-elliptic, the front ones being 42 and the rear ones 46 inches long. Two Model D cars are exhibited, a touring car with Cape top and also a runabout. These cars have 106 inch wheel base and 32x3½ inch wheels; they are shaft driven by a 5¼x5 inch opposed motor similar to that used in last year's car. The flywheel is now placed in the rear, however, and the motor is supported by trunnions on the cylinder heads, which work in bearings on the frame. External and internal hub brakes are used, and, as in Model C, when the hand lever is forward it gives high speed by a planetary transmission; when back it sets the emergency brakes. Both these models use thermo-syphon cooling. A Model G, five passenger touring car, driven by a four cylinder, 5x5 inch motor, is also shown. It has a 112 inch wheel base and 34x4 inch wheels, and is shaft driven by a three speed and reverse progressive sliding change gear. The springs are semi-elliptic, 42 inches in front and 46 inches in rear. Both sets of brakes are on the rear hubs. These specifications also apply to Model H, except that it is a seven passenger car. We expect to publish a complete description of these cars in an early issue.



JACKSON TOURING CAR, MODEL G.

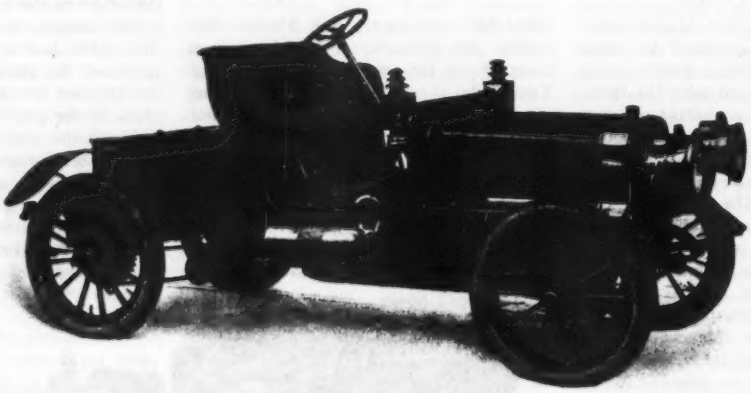
THE HOLSMAN AUTOMOBILE COMPANY,

of Chicago, exhibit a gasoline carriage closely resembling a light horse driven phaeton with folding top, the wheels being of the regular carriage type, 48 inches rear and 44 inches front, shod with narrow hard rubber tires. The engine is of the two cylinder opposed horizontal type, rated at 10 horse power, and is placed under the seat, the cooling being helped by an air draft from the flywheel, which has its spokes cast so as to form fan blades. The cylinders have cast flanges. The valves are placed on the sides, the inlets being of the automatic type. The cylinders and crank case are all cast in one piece. Ignition is by jump spark from a double coil and dry batteries, two sets of five cells each of the latter being used. There are two spark plugs in each cylinder, one being located between the valves and the other in the centre of the dome. A switch connects one or the other at will. The spark lead is automatically retarded whenever the starting crank is turned in the direction of rotation. Replacing of the crank in the position of rest advances the spark to the proper position for running, the lead being constant for all speeds. The lubrication is by means of a force feed oiler driven by a spring belt from the crank shaft. Power is transmitted to a countershaft by two silent chains. Either of the sprockets on the crank shaft, over which they run, may be clutched to the shaft at will by a jaw clutch. This gives the two forward speeds. Mounted upon each end of the countershaft, which is parallel with the axles, are two grooved pulleys, one large and one small. The latter is on the line of the tire, but normally out of contact. The large pulleys are belted by means of a wire cable to very large

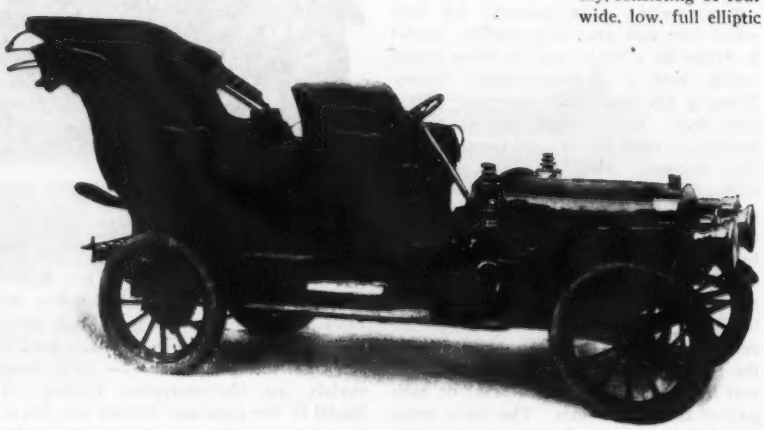
HOLSMAN MODEL 10.

grooved pulleys mounted upon the driving wheels. These form the transmission forward. Reversing is accomplished by throwing the countershaft rearward, so that the small pulleys bear against the tires (the cables simultaneously becoming loose), thus forming a friction drive, and giving the same number of rear speeds as forward, but much lower, owing to the difference of ratio in the final drive pulleys. The large driving pulleys attached to the wheels also serve as the brake drums.

The gasoline tank is placed in the seat back. Steering is by means of a horizontal lever, similar to those used by many of the electric vehicles. Throttling is accomplished by twisting the end of the steering handle. The gear changing is done by means of a small hand lever shifting a short distance along the front of the seat. A large side lever swings the countershaft to start, stop and reverse the movement of the vehicle in the manner previously explained. The springs are all full elliptic, and the carriage is claimed to be absolutely vibrationless. In front of the dash is a compartment which holds the batteries and furnishes a storage space in addition. There is also room for storage behind the seat. The forward mudguards are arranged to swing with the front wheels. A tool box is arranged under the floor just back of the dash. The weight is about 900 pounds. No differential is used, as the belts will slip enough to accomplish the object sought.



ACME RUNABOUT.



ACME TOURING CAR.

ACME MOTOR CAR COMPANY

exhibit three cars, one of the much favored large runabout type, finished in brown with brown leather upholstering; also one touring car and one limousine. The motor has four cylinders, cast separately, with valves on opposite sides. The single system of ignition is by magneto. This company retain the same type of gearing they used last year—four speed sliding gear of the progressive type, with direct drive on the third speed, and the fourth speed a geared-up drive. The Acme Company last year set this fashion in gearing, which is being followed by a number of American makers.

The exhibit of

THE PREMIER MOTOR CAR COMPANY,

of Indianapolis, displays remarkable uniformity of outline and coloring. They show a chassis in red, a touring car of the same color fitted with a Cape top, and a landaulet or demi-limousine in red and black; also a runabout in white. It is noteworthy that all these cars are driven by the new Premier water cooled, four cylinder motor. All these models have been fully described, except the landaulet, which is upholstered in black leather. The doors are automatically closed by springs. The back quarter of the entire body may be folded, making practically an open car. The Premier torsion rod is unique, consisting of two tubes, one attached to the top and the other to the bottom of the driving gear housing, and united at their forward ends. They are connected to the frame by a ball and socket joint, and have a helical spring to take forward and back motion. The Premier spring suspension is particularly noteworthy, consisting of four wide, low, full elliptic

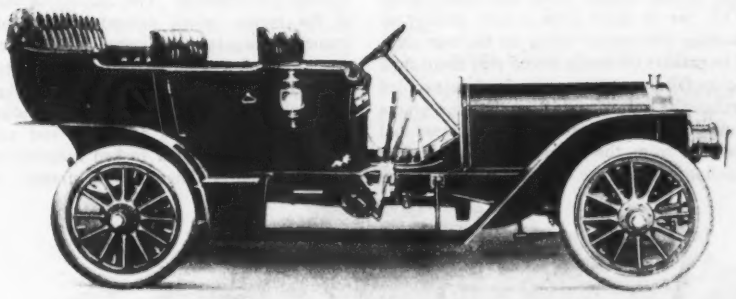
springs hung outside the frame. While these springs are called full elliptic, they are more nearly the shape of the old Diamond spring, which was noted for its easy action.

THP E. H. V. COMPANY,

of Middletown, Conn., exhibit five cars—two runabouts and three touring cars—one of the latter being a six cylinder, 40 horse power, seven passenger machine. The six cylinder engine is constructed upon the same principle as their three cylinder compound, being practically made up of two of the former outfits above the crank case; the latter, however, is continuous, as are also the shafts, &c. In fact, the writer does not want to be understood as saying that it is a case of coupling up two engines. A complete technical description of the engine and cars will be given in our columns in the near future. The clutch is of the multiple disc type; the gear sliding, with four forward speeds on the large car. The drive to the rear axle is by bevel gears on all except the six cylinder car, which has double chain drive. Any of the bevel gear types may be furnished with double chain drive if desired. The brakes are external and internal on the rear hubs. The side lights of the large car are electric, supplied by storage battery. The company also exhibit one of their engines with sections cut away, to show the internal construction.

THE FORD MOTOR COMPANY,

of Detroit, exhibit a six cylinder model, with Cape top; a four cylinder runabout, with top and a chassis of each model. No changes have been made in the runabout, except in the quality of material, nickel steel now being used for gears, shafts and front axles. The price remains unchanged. In the big car increased compression and refinement of detail have increased the horse power 20 per cent, it is claimed, and the radiator has been increased correspondingly. The wheel base has been lengthened 6 inches, making it 120 inches. Frame



Six Cylinder Compound.

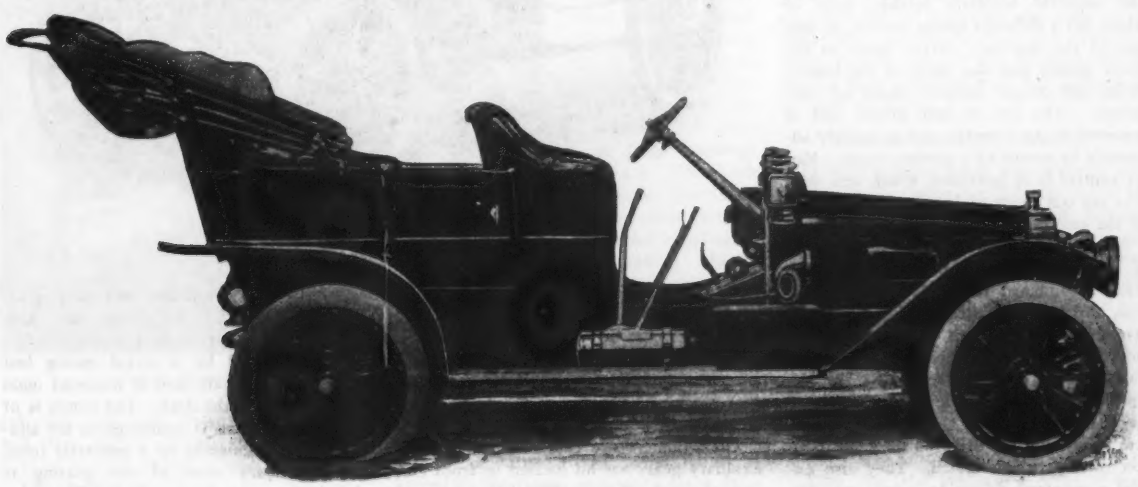
stock is now three-sixteenth inch, instead of one-eighth inch, and the frame is trussed. There is room for two extra seats in the tonneau. A flexible joint between the motor and the change gear has been added. The hubs are heavier than in the 1906 model, and the front axle is now a one piece forging. Gears, shafts, frame and large forgings are chrome-nickel steel.

MITCHELL MOTOR CAR COMPANY.

Two complete cars, a model F touring car and a Model E runabout, are shown by the Mitchell Motor Car Company, of Racine, Wis. They have a rather long space, and have placed a car at each end of it with the decided advantage of allowing the observer to get a good idea of the body outlines. Both cars are shown in dark colors, and look very neat and serviceable. Their most noticeable outward feature is the extremely wide and flaring front mudguards, which extend into the frame. Model F is shaft driven through a three speed and reverse progressive sliding change gear, by a four cylinder 4½x5 inch motor. Model E has the same motive system, but the engine is of 3¾ inch bore by 4 inch stroke. Perhaps the most striking feature of the cars mechanically is the valve mechanism, the exhaust being in the top of the cylinder and the inlet on the side. This and other Mitchell features were fully described in a recent issue.

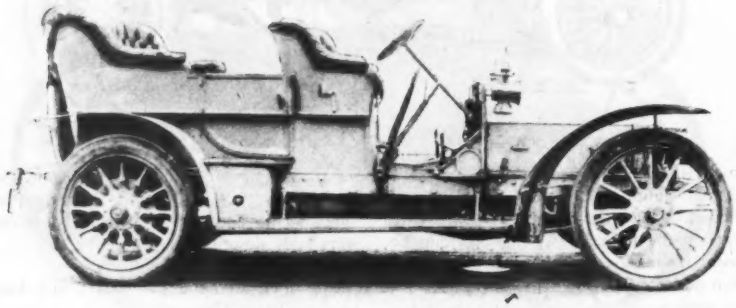
THE AEROCAR COMPANY.

This company exhibit four cars, including two exhibition chassis, of which one has a water cooled and the other an air cooled motor. The water cooled motor is of a standard make and is supplied in order to meet the demand for this type of engine. The chassis of the air cooled type is very handsomely finished and is a carefully designed machine. In both cars the inlet side of the motor is on the left. This necessitates some unusual connections between the carburetor and the hand control on the steering wheel; but these connections have been arranged so as to be out of the way and not unduly complicated. The motion of the controlling devices on the steering wheel is conveyed by bevel gears to concentric vertical shafts carried in an extension of the steering gear casing, as shown in the sketch. This arrangement is probably employed as being the most convenient means of making connection to the carburetor on the left side of the motor. The crank case is provided with two relief pipes leading up beside the cylinder. The



Ford Model K Six Cylinder.

fan is belt driven from the crank shaft. This car is fitted with a very ponderous looking differential casing on the rear axle. The makers evidently intend that there shall be no failures at this point. In the air cooled motor the valves are all in the tops of the cylinders, and operated by rocker arms and tappets from the single cam shaft. The cooling flanges are cast integral with the cylinders, and owing to the arrangement of the inlet and exhaust pipes the flanges are practically unbroken the full height of the cylinders. The air cooled chassis is fitted with a rakish-like runabout body, which represents about the extreme of the present tendency of runabout design. It is finished in gray with red upholstering.



FORTY HORSE POWER WESTINGHOUSE 1907 MODEL.

SOC. ANON. WESTINGHOUSE.

This concern exhibit one limousine, which bears the label: "This car has traveled more than 18,000 miles without costing one cent for repairs." They also show a chassis which follows in general the same lines as the previous products of this company. Fan blades are cast in the flywheel. The gearing is selective, four speeds and reverse, with direct drive on the high speed and double chain drive. The company also use their own make of carburetor, which has two separate auxiliary intakes, each of which has a different spring tension, so that one of the auxiliary valves opens at the lower speeds and the other at the higher, giving the proper mixture under all conditions. The fan is belt driven and is mounted on an eccentric and is quickly adjustable by means of a ratchet clutch. Motor control is by governor, which acts until it is cut out more or less by a hand lever on the steering column.

THE MARION MOTOR CAR COMPANY,

of Indianapolis, are specializing on the Hassler combined rear axle and transmission, which is exhibited both in parts and assembled with sections of the casing removed. This gear combination gives two forward and one reverse speeds, by the straight fore and aft motion of a hand lever, which action is secured by pin and spur gears, and the drive on the high is direct through a jaw clutch. They also exhibit a runabout driven by a four cylinder, 4x4 inch water cooled Reeves motor, and employing a multiple disc clutch and the Hassler transmission. The supporting legs of the motor, which extend to the side frame, are separate and bolted to the crank case. The front springs are semi-elliptic, while the rear springs are of the full elliptic scroll end type. The tube surrounding the driving shaft acts as radius rod and torsion member, and a forked member on the front end is hinged to the frame. A single grease packed universal joint is used. A chassis of this runabout, driven for demonstration purposes by an electric motor, completes the exhibit.

THE AMERICAN LOCOMOTIVE AUTOMOBILE COMPANY

exhibit two Berliet limousines, one touring car and a polished chassis. The latter is of 40-50 horse power rating, four cylinder, with low tension magneto ignition. The bore and stroke are 4¾x5½ inches. The magneto is gear driven from the cam shaft, while the pump is driven in the same manner from the opposite side, there being two cam shafts with valves on opposite sides of the heads.

The cylinders are cast in pairs and the auxiliary gears are all located in front and incased, part of the casing being integral with the aluminum crank case, while the cover is detachable.

MARION ROADSTER, MODEL 7.

The oiler is mounted on the rear of the dash and driven by a belt from the inlet cam shaft.

The pump is centrifugal and the radiator honeycomb.

The clutch is of the multiple disc type, located in the hub of the flywheel, while the spokes of the latter are cast to form fan blades. The slide gear, of the selective type, is placed well back toward the rear, a double chain drive connecting from it to the rear wheels.

The brakes are internal expanding upon the rear hubs, the countershafts being equipped with external ones.

The large copper gasoline tank is suspended under the pressed steel frame behind the rear axle; very long semi-elliptic springs are used for both front and rear, both axles being of I beam section.

The yoke of the steering pivots is integral with the steel axles.

The drive is direct on both the third and fourth speeds, the last speed being obtained by exchanging the bevel pair with another pair.

THE CLEVELAND MOTOR CAR COMPANY

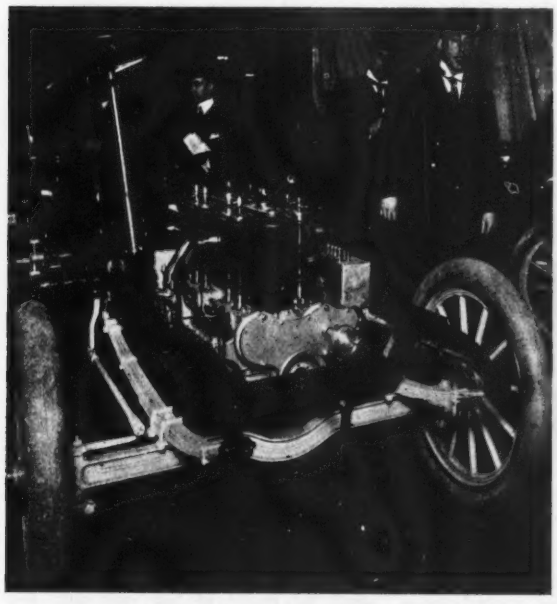
exhibit a polished 30-35 horse power chassis, two touring cars and a limousine. The engine is a four cylinder one, with the cylinders cast in pairs. The valves are placed upon opposite sides, and are all mechanically operated. Ignition is by low tension magneto. Cooling is by a Whitlock radiator and centrifugal pump, the latter driven by gear from the cam shaft gear. The fan is belted to the pump shaft. Oiling is by a positive feed multiple oiler, which is driven by a coiled spring belt from the cam shaft, and is mounted upon the rear side of the dash. The clutch is of the cone type, and is connected to the sliding gear transmission by a universal joint. The secondary shaft of the gearing is placed above the driving shaft. The drive on the high gear is direct. The bearings are plain, with ring oilers. An external

brake acts upon a drum just back of the gear case.

The drive to the rear axle is by a propeller shaft and two universal joints, the rear joint being of the sliding type. The rear axle is a typical bevel gear arrangement, with the wheel bearings placed inside the hubs, doing away with all strains on the driving axle except that of torsion. The hub brakes are internal expanding, and are fully covered for protection from dust. The springs are semi-elliptic, both front and rear. The front axle is of I beam section steel. Steering is by screw, nut and rack. Artillery wheels are used, shod with 34x4 inch tires. The forks of the steering pivots are on the stub axle. The frame is made of pressed steel.

CRYDER & CO.

have on exhibition a single car which bears the announcement that it has been purchased by Thomas A. Edison. This has make and break ignition and sliding gear transmission of the progressive type. The most noticeable feature of the car is its self-starting attachment. This consists of a hand-operated air pump supplying a reservoir, and pet cocks on the inlet and exhaust sides of each cylinder, connected to a lever which serves to open and close them. To start the motor the pet cocks are opened and air from the reservoir, which passes through the carburetor, is blown into the explosion chamber of the cylinders, introducing an explosive charge into each. The



FRONT VIEW OF DRAGON CHASSIS.

pet cocks are then closed and the motor will start, unless, as very seldom happens, it is on a dead centre.

The product of

THE DRAGON AUTOMOBILE COMPANY,

of Philadelphia, will be fully described in one of our next issues; we will therefore confine ourselves to a description of the exhibit and an outline of the main features of the car. They show one touring car, one runabout with a polished body of sheet brass and copper, and a chassis with the cover of the change gear replaced by plate glass and the front cylinder and valve chamber in section. Both the runabout and touring car have the same chassis, arranged as follows: The motor is a four cylinder vertical, 4x4½ inches, rated at 24-26 horse power, with mechanically operated valves in chambers on opposite sides of the cylinders. The method of attaching inlet and exhaust manifolds and water pipes is unusual, and consists of studs set centrally in the cylinder openings. The screw plugs over the valves are unusually large and those on the inlet side contain the spark plugs, while those on the exhaust side carry the relief cocks. Cylinders are cast in pairs with large openings in the top. The clutch is a leather faced cone and connects through a squared coupling to the sliding change gear, which gives three speeds and a reverse on the progressive system. Drive to the rear axle is through an enclosed shaft with one universal joint at the forward end. On the front end of the housing of this shaft is screwed a large forked piece, which is hinged to the frame, and which takes driving and braking torque. The rear axle is of the semi-floating type, with Hyatt roller bearings. Wheels are 32x3½ inch on the touring car and 34x3½ inch on the runabout.

DORRIS MOTOR CAR COMPANY.

At the booth of the Dorris Motor Car Company, of St. Louis, are exhibited three

THE DRAGON RUNABOUT.

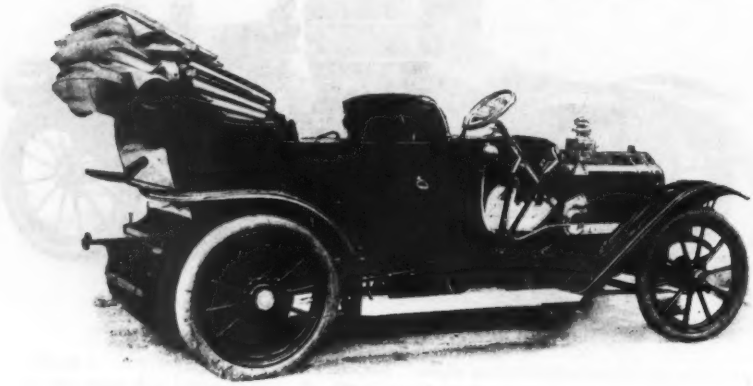
complete cars and a polished chassis. The limousine model is a quiet and dignified production in dark green, upholstered in a fine quality of dull black leather. The touring car model is the one described in a recent issue. A runabout model is shown in gray with maroon trimmings. This model has the same mechanical equipment as the others, with the exception that the rear springs are 2 inches longer and are of the semi-elliptic type, the cross spring used in the other cars being omitted. Motor and radiator are, of course, moved back to accommodate the body design. It will be remembered that this car is shaft driven by a four cylinder, 4¼x5 inch motor rated at 30 horse power, and has a three speed and reverse sliding change gear. The mechanical equipment is practically the same as in 1906. Especially noticeable is the unusually large diameter of the fan flywheel, which insures even distribution of the air passing through the hood.

DE LUXE MOTOR CAR COMPANY.

In the De Luxe booth are exhibited two models of the Queen car, made by the C. H. Blomstrom Motor Company, of Detroit. They comprise the Queen 28, a touring car with a four cylinder, 4¼x4¾ inch motor, three speeds and a reverse progressive sliding pinion change gear, shaft drive and expanding clutch. All the mechanism is of the typical Queen construction, but the body is changed from the double victoria effect found in the 1906 model to a straight line design. A runabout body mounted on the same type of chassis is also shown, and is finished in English vermilion. It should be noticed that the upholstery is of a high grade.

The De Luxe Motor Car Company, of Detroit, show a single complete car. The

floor boards are removed, showing the accessibility of the machinery. This new car is a large, luxurious, seven passenger touring model driven by a 50-60 horse power four cylinder motor with copper water jackets and valves in the heads, those for each cylinder being operated from a single cam by a walking beam on top. A leather faced cone clutch, four speed and reverse selective sliding pinion change gear and shaft drive are used. The rear axle is of original construction, combining an ordinary tubular axle with a chrome nickel steel forging underneath, on which the wheel runs and which carries all loads. The construction throughout is of highest grade, chrome nickel steel and D. W. F. ball bearings being extensively used. The model shown is finished in De Luxe red, with a coach lake running gear, and the luxurious finish and upholstery are attracting a great deal of attention. We are publishing elsewhere in this issue a very complete description of this car. In this booth are also shown the various Queen models, described elsewhere.



De Luxe Car.

THE BUCKEYE MANUFACTURING COMPANY,

of Anderson, Ind., show four models, a Model J roadster and Models H, G and L touring cars. Model L is a continuation of a 1906 model, while the other cars are new. Model L is chain driven by a 6 inch bore and 4 inch stroke opposed motor. Models H, G and L have four cylinder, vertical, 4½x5 inch Rutenber motors, rated at 35-40 horse power. All the models use the well known Lambert friction transmission; but in Models J and H shaft drive is used and power is transmitted from a bevel rear axle through an enclosed shaft to another pair of enclosed bevels on the right end of the friction wheel shaft. The transmission is protected by a tight sheet metal fan underneath. All models use semi-elliptic front and full elliptic rear springs, and the frames are angle steel in the lighter and angle steel laminated with wood in the heavier models. A transmission driven by an electric motor is also shown.

THE ST. LOUIS MOTOR CAR COMPANY,

of Peoria, Ill., exhibit a 32-36 horse power runabout and a touring car, on the same chassis, except for arrangement of parts. These cars are but little changed from their 1906 models. Babbitt plugs have been added in the bearings for the crank shaft and crank pins, and a plate clutch has been substituted for the multiple disc formerly used. The change gear has been improved in material and workmanship, and the capacity of the pump has been increased.

They also separately exhibit the motor for their new 50-60 horse power car. This motor is 4½x5½ inch. The cylinders are cast in pairs, and are an interesting piece of foundry work in that the only core opening is in the top. Both inlet and outlet for the water are in the top plate, and the inlet has a pipe reaching nearly to the bottom of the jacket. The cylinders are offset. A plate clutch with brake is used and a three speed and reverse selective change gear. The entire power plant is mounted on a cast base made in two parts, and encloses the bottom of the flywheel.

THE PIERCE ENGINE COMPANY,

of Racine, Wis., exhibit a complete touring car and chassis of their 40 horse power model. The motor is 4½-inch bore and 5½ inch stroke, with cylinders cast in pairs and valves on opposite sides. A cone clutch and three speed and reverse sliding change gear are used. A double jointed driving shaft extends to the rear axle, which is of the floating type. The front axle is tubular, the motor bearings are of best babbitt and all the other bearings are ball. Nickel and high carbon steels are freely used. The springs are semi-elliptic, front 42 inches and rear 50 inches long. All brakes are on the rear hub. The body is a straight line design and is finely upholstered.

THE MORA MOTOR CAR COMPANY,

of Newark, N. Y., show a gentleman's roadster in gray and a standard runabout in the same color. These cars both have 98 inch wheel base and 32x3½ inch wheels. They also show a touring car, with a 103 inch wheel base and 32x4 inch wheels. Besides these cars they exhibit a polished sample of the power plant, with integral pan, used in all their models. This consists of a four cylinder, 4x5⅛ inch, 24 horse power motor, with a sliding change gear of the three speed and reverse progressive type. Both of these are mounted on a pan extending to the side frame, which completely encloses all the lower part. The crank case has ample hand holes on each side, and on the cover of one of these is mounted the roller contact timer, which is bevel gear driven from the cam shaft. The frame is of selected maple, and a three-sixteenth inch strip of steel, 4 inches high, is inserted in the middle of the section.

THE BARTHOLOMEW COMPANY

exhibit three models of the Glide car—one light four cylinder runabout, rated at 40 horse power; a touring car, seating five, and one touring car with a larger body. A six cylinder model will be in later in the week. This company is carrying forward the model of last year with few changes, except in the gearing, which was of the planetary type, but is now of the sliding form, carried in a casing connected with the differential casing on the rear axle. The company use a multiple disc clutch, and a new multiple disc brake on the rear hubs. The reaction brace for these brakes is so arranged that it also acts as a spring check,

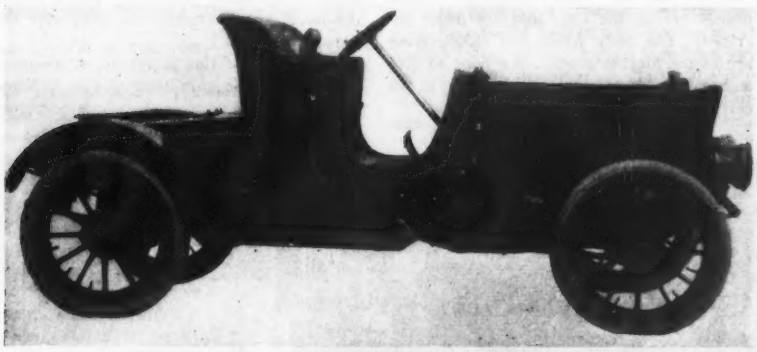
Lambert Runabout, Model J.

and no other shock absorbers are necessary on the rear axle.

WELCH MOTOR CAR COMPANY,

Pontiac, Mich. The Welch car is interesting from three points of view: It is one of the few cars in which the ideal position for the valves (which are located at an angle of 45 degrees in the head of the cylinder) is used; it uses individual clutches for speed changing, these being of the multiple disc, steel on bronze pattern, and the valve mechanism uses a multiplying lever from the cams to the valve stems. The cam shaft lies around the centre of the cylinder head, being driven by a bevel gear located at the forward end of the engine, and the tapped levers are so proportioned that the lift is about two and a half times the throw of the cam, a remarkable design innovation. Separate exhaust and inlet pipes are used, and an especial point of novelty is that the water pump is located directly in the centre of the radiator forward of the fan.

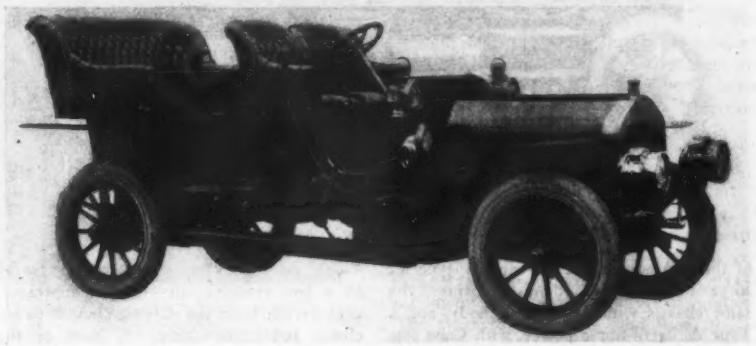
There are a number of interesting points that we cannot give space to in this issue, but one noticeable feature is the exposed worm of the steering device and the adjustable steering wheel, which is capable of longitudinal adjustment on the steering column. The control levers are held stationary by a central pillar, and remain in a fixed position to which the relation of the steering wheel may be altered as desired. A live axle is used, the propeller shaft casing tube performing the double purpose of a rest for the propeller shaft and a torque rod, a construction which seems to be growing in favor, and of which the Welch car is a particularly good exponent.



DOLSON RUNABOUT.

THE DOLSON AUTO COMPANY,

of Charlotte, Mich., exhibit two touring cars, Models F and H, at their own space, and in an adjoining space show the "cannon ball runabout." Model F is a four cylinder, seven passenger car, driven by a 5x5¾ inch Milwaukee motor, rated at 55-60 horse power; a large plate clutch transmits power to a three speed and reverse sliding change gear. The gear changing lever is interlocked with the clutch by an ingenious mechanism, of which there are no photographs at present. The shaft drive is ball bearing, and the axle is of the floating type. The wheel base is 123 inches and the tread 56 inches. The wheels are 34x4½ inches. The runabout power plant is similar, but the wheels are 36 inches in diameter. In Model H, a smaller motor, 4½x5¼ inches, rated at 35-40 horse power, is used. The rest of the power plant and transmission is the same except that the rear axle is not of the floating type. Special mention should be made of the spring suspension, which consists of semi-elliptic front and scroll head full elliptics in the rear. The bodies are wood covered with sheet steel.



DOLSON TOURING CAR.

THE AMERICAN METAL WHEEL AND AUTO COMPANY,

of Toledo, Ohio, show a dainty little electric runabout for children's use. It is designed somewhat after the lines of the Baker runabout, the motor being attached to the under side of the body, enclosed and driving by gear and chain to the rear axle, which has no differential. The brake is set by throwing the controller handle to the extreme rear. so that the complete control, except steering, is combined in the one lever. A one-half horse power ball bearing motor and six cells of 96 ampere hours capacity comprise the power system, and is said to run the car from 20 to 25 miles per charge, at 8 to 10 miles per hour. The seating capacity is for one child. The body is 47 inches long and 17½ inches wide. The wheels are 20 inches in diameter, shod with cushion tires. The wheel base is 41 inches, and the tread 29 inches. There are two speeds each, both forward and reverse. The weight is 350 pounds. The car is provided with electric lamps and bell.

THE PENNSYLVANIA AUTO MOTOR COMPANY,

of Bryn Mawr, Pa., exhibit a touring car and chassis of four cylinder construction. The engine has individual cylinders of 4½ inch bore and 5 inch stroke, and is rated at 35 horse power. The inlets and exhaust are operated from one cam shaft, ignition is by jump spark from four coils. The gear pump is mounted direct on the end of the cam shaft and piped to a honeycomb radiator. A cone clutch and selective sliding gear transmission is used with an encased universal joint connecting them. The rear drive is by single joint and propeller shaft. The rear axle is of the floating type, and the brakes are external bands. A pressed steel frame and semi-elliptic springs are used.

THE DEERE-CLARK MOTOR CAR COMPANY,

of Moline, Ill., display a touring car and a runabout, each equipped with a four cylinder engine rated at 25-30 horse power, with bore and stroke of 4 and 5 inches respectively. The cylinders are individual, with valves placed on opposite sides of the head. Ignition is by a four coil storage battery outfit. The clutch is of the multiple disc type, and the transmission, which is of the selective type, is provided with shifting jaw clutches, instead of shifting the gears, and is interlocked with the clutch to prevent shifting when the clutch is in. Transmission to the rear axle is by a single universal joint and propeller shaft, the latter being enclosed in a sleeve extending from the rear axle casing to a joint just back of the Cardan, where a ball bearing is inserted between the shaft and sleeve. The brakes are external bands on the rear hubs, and there is also one at the rear of the transmission case. The rear springs are full elliptic, scroll design, while the front ones are semi-elliptic. The timer is mounted upon a vertical shaft, which is driven by mitre gears at the centre of the cam shaft, the timer being located just above the cylinders, where it is unusually accessible. The radiator is of the fin type, and the frame of pressed steel construction.

THE ST. LOUIS CAR COMPANY,

of St. Louis, Mo., exhibit three models

16-20 HORSE POWER 1907 REO LIMOUSINE.

of their American Mors cars, a type C, 40-52 horse power, demi-limousine; the same chassis with a limousine body, and a Type A, 24-28 horse power, with Cape top. These cars were very fully described in a recent issue, and only specifications will be given here. They are the American reproduction of the well known Mors design. Type A is a 14-18 horse power, four cylinder car, with a wheel base of 103 inches and a tread of 54 inches. It has 34x4 inch wheels, sliding change gear, giving four forward and one reverse speeds, and double chain drive. Low tension make and break ignition is used.

Type C has a 40-52 horse power motor, with offset cylinders and jump spark ignition, in addition to the make and break. Drive and change gear are the same as in Type A. It seats seven passengers, has a wheel base of 120 inches, a tread of 56 inches and 34x5 inch wheels.

HARRISON WAGON COMPANY.

So many changes have been made in the Harrison car that it is practically an entirely new model. It is shown at the exhibit of the Harrison Wagon Company, of Grand Rapids, Mich. The self starting feature, depending on the use of acetylene gas, is retained. The two cars exhibited are both of the seven passenger touring car type, and are large cars, having 123 inch wheel base and being driven by a four cylinder 5x5 inch motor. To start this motor a small lever on the dash is turned, and acetylene gas is admitted from a Prest-O-Lite tank on the side of the car until a pressure of 7 pounds is reached. The gas is then shut off, and by turning another lever on the steering column compressed air is admitted from a tank under the seat until a pressure of 20 pounds is reached. The two are allowed to mix for an instant, then an additional 10 pounds of air is admitted, and the charge is ignited by pressing the proper button on the dash, where an indicator shows which cylinder should be sparked. The air is compressed by a two cylinder, air cooled compressor, gear driven from the driving shaft between clutch and change gear. A lever on the dash operates to depress the automatic inlet valves, and also to provide a compression relief. A third lever on the steering post shuts off the carburetor and opens communication with the atmosphere, which allows cold air to be drawn through the cylinders when descending hills. A cone clutch and a sliding jam clutch change gear, operated selectively, are used. Shaft drive is employed, and the shafts and wheels run on roller bearings. Both brakes are on the hugs and are pedal operated. The body finish and upholstering are of the highest grade. We hope to give a complete description of this car at an early date.

THE REO MOTOR CAR COMPANY,

of Lansing, Mich., show a two cylinder touring car with Cape top; another car of the same model without top; a polished chassis for these models; a single cylinder runabout and their single cylinder model with folding rear seat. Last but not least, judging from the attention paid it, was the small reproduction of the two cylinder car, complete in every detail.

Quite a few detail changes have been made in the two cylinder model. The horse power of the motor has been increased. The wheel base is 6 inches longer than in 1906, and the tonneau is 3 inches longer and 2 inches wider. The chassis is 2½ inches lower. A new style of bonnet considerably longer than in former models is used. A pressed steel dash replaces the wood dash formerly used. The gasoline capacity has been increased from 9 to 12 gallons. An under pan of fibre has been added.

THE GROUT BROTHERS AUTOMOBILE COMPANY,

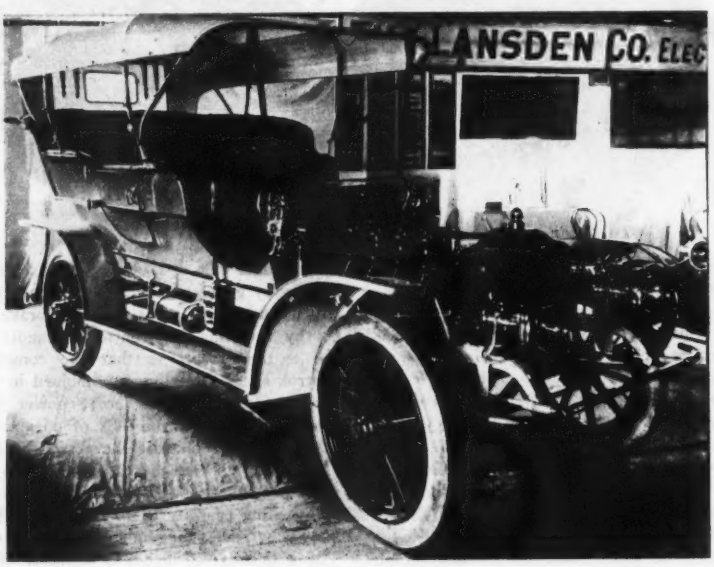
of Orange, Mass., exhibit a large touring car, with folding top and a finished chassis.

The engine is a 4½x5 inch, four cylinder, and rated at 35-40 horse power. The cylinders are individually cast and are separately lubricated from a multiple force feed oiler.

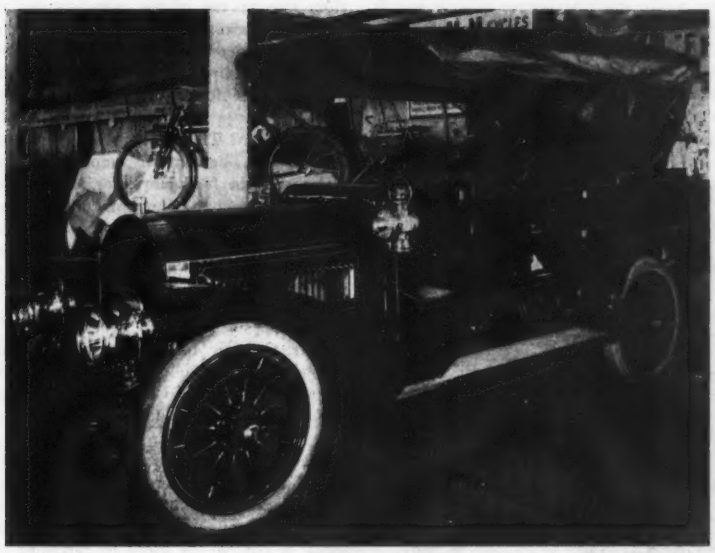
The crank shaft has five bearings.

Ignition is by a single coil, commutated, secondary outfit, the commutator being mounted upon a vertical shaft at the rear of and projecting above the cylinders. All valves are mechanically operated and all located upon one side, using a single cam shaft. The spark plugs are placed above the inlets and pet cocks are used over the exhaust valves.

The pump, of the gear type, is mounted direct upon the cam shaft. The radiator is of the honeycomb type. A cone clutch



HARRISON TOURING CAR.



THE FRONTENAC TOURING CAR.

is used and a Cardan joint placed between it and the sliding gear case, which is of the progressive type.

A double chain drive is employed for transmitting to the rear wheels. Brakes are external and internal on the hubs. Steel axles of square section are employed for both the front and rear with Lemoine steering pivots. All springs are semi-elliptic. The frame is armored wood. A large, pressed steel tank is mounted upon the chassis under the seat for gasoline.

ABENDROTH & ROOT MANUFACTURING COMPANY

have two of their "Frontenac" cars on view. One is a large touring car, the other a high powered runabout. The same power outfit is used in both cars. The engine has four cylinders, with a bore of 4¾ and a stroke of 5 inches, and is rated at 45 horse power. The speed is about 55 miles per hour with standard gearing. Ignition is by high tension magneto and single coil, with distributor auxiliary. The cylinders are cast in pairs, and the valves are all placed on one side. The centrifugal pump is gear driven, as is also the magneto, which is mounted upon the same shaft. The radiator is of the finned tube style. The clutch is a single disc, with clamps between two others. The slide gear is selective. A propeller shaft with two Cardan joints and bevel gears completes the rear drive. Two distance rods, one on each side of the propeller shaft, keep the rear axle rigid. The driving axles are of the floating kind; brakes are external and internal, on hubs. Ball bearings are used throughout the transmission and axles, and the transmission is interlocking with the clutch.

THE CONOVER MOTOR CAR COMPANY,

of Paterson, N. J., show a complete touring car with detachable tonneau; also a body with the runabout back in place. Besides these they exhibit a motor and parts of the same; also change gear, axles and other parts. The motor is a four cylinder vertical, 4½x5 inch, rated at 35-40 horse power. Exhaust and inlet manifolds are clamped against short tubes tapered each way to a knife edge. A cone clutch, three speed and reverse selective sliding gear, and clutch driven live rear axle are used. Between the clutch and change gear is a peculiar sliding and universal joint. Its central member is a square section ring with four radial square section pins, which slide in slots in two forked members, one on the clutch, the other on the change gear shaft. Ignition is jump spark from a storage battery constantly kept at normal charge by an Apple dynamo. The gear control mechanism is completely enclosed, and consists of two short levers, which are picked up as needed by a dog which is actuated by a finger lever on the grip. This finger lever is pivoted in the middle; pressing in the top end gives two speeds by a forward and back movement of the hand lever; pressing in the bottom gives the other two by the same movement. This lever is interlocked with the clutch, and releasing the clutch throttles the motor. A small pedal on the footboard cuts out the ignition when using the motor as a brake while descending hills. The wheels are on Timken bearings, and the change gear is on H.-B. ball bearings. A forged I section front axle is used.

BOUSQUET & CIE.,

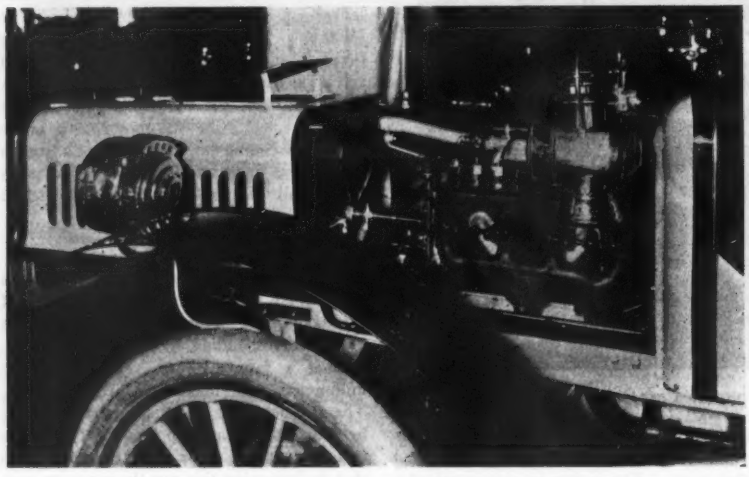
importers of the Bianchi cars, exhibit a 20-30 horse power, with landaulet body, of the 1906 model. They also exhibit a chassis of the corresponding 1907 model. The engine is a four cylinder, vertical, 110x130 millimeter, with make and break ignition. The magneto sets on a solid base, and is held thereon by a strap hinged at one side and held at the other by a thumb nut, so that by loosening this nut the magneto may be removed. A multiple disc clutch transmits the power through a rather long shaft to the four speed and reverse selective change gear, which is operated by a Mercedes type control. Drive to the rear wheels is by side chains. The wheel base is 109 inches; wheels are 34x4 inches. All springs are semi-elliptic. Both front and rear axles are I section. The front axle is of the reversed Elliott type. Steering is by a worm and sector gear. The service brake is on the countershaft, and is pedal operated. It is adjusted by a thumb nut. Inclosed expanding brakes on the rear hubs are sliding

CONOVER TOURING CAR.

cable equalized, and are operated by the outer hand lever. Chrome-nickel steel and D. W. F. bearings are used throughout.

THE MOLINE AUTOMOBILE COMPANY

exhibit a Model A touring car in red, with Cape top, and a Model C runabout in pearl gray, with black striping. Very few



MOLINE ENGINE, SHOWING METHOD OF SLIDING HOOD FORWARD.

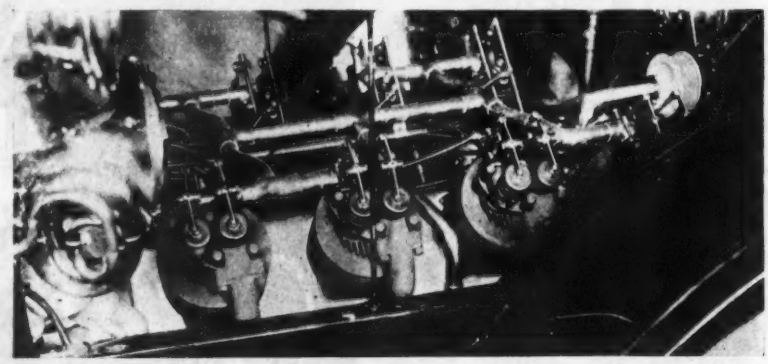
changes have been made from the 1906 models. Heavier and more eccentric piston rings are used, three above and one across the pin. The compression has been raised from 60 to 75 pounds, and a neat dust pan has been added. The cylinders are file finished, to improve the appearance, and the cast aluminum fan is non-polished. The Gemmer steering gear is now used, instead of the Brown-Lipe, and heavier rear axles are used. Their novel spring suspension, consisting of two scroll head full elliptics at the rear and a semi-elliptic set crosswise in front, is retained. The hoods slide forward in steel guides and are retained by small lever operated eccentrics on the sides, and wing nuts behind the dash. A single casting carries the support for the steering post on the footboard, and contains the slots for the brake pedals.

NORDYKE & MARMON COMPANY,

of Indianapolis, have a large and attractive exhibit, and their new eight cylinder, air cooled car is attracting a great deal of attention. It is a seven passenger touring car, with 128 inch wheel base, with 36x5 inch rear and 36x4 inch front wheels. The 60 horse power motor is of the V type, and is not as long as some six cylinders, and by the overlapping of its power impulses must give a practically continuous torque at all speeds. The car is said to weigh only 3,700 pounds. All the well known Marmon features are retained. Besides this car, they show a Model F, five passenger touring car, and a Model F limousine, driven by 35 horse power, 5x4½ inch motors, with disc clutch and selective change gear. The wheel base is 104 inches, and the wheels are 34 inches front and rear. A Model C-7, 24 horse power, four passenger touring car, is also shown. This model employs a planetary transmission. The wheel base is 96 inches, and the wheels are 32x4 inches front and rear. At the centre of the exhibit is a Model F polished chassis, whose workmanship is equal to any ever shown at an automobile show in this country. A feature of all the Marmon cars is their cast aluminum bodies, the method of construction of which has been gradually perfected by this firm.

ROLLS-ROYCE, LTD.,

an English firm, show one 75 horse power touring car with six cylinders cast separately, and also a smaller edition of six cylinder car rated at 30 horse power, with cylinders cast in pairs. The power plant arrangement of this car is very neat and compact. It is claimed by the makers that the engine is "the most silent in the world." The commutator is carried on the dash and



NEW EIGHT CYLINDER, AIR COOLED MARMON ENGINE.

is driven from the forward end of the left half-time shaft by a vertical shaft connected by bevel gears to a horizontal shaft reaching back to the dash and provided with a universal joint. The valves are all driven by the left hand cam shaft, but are on opposite sides of the motor, the inlet on the right side on top of the cylinders and operated by rocker arms, and the exhaust on the left under the combustion chambers and operated directly by tappets. The gearing provides four speeds, with selective control and propeller shaft drive to the rear wheels. The direct drive is on the third speed. The company employ their own make of sight feed lubricator, driven by a short belt from the timer driving shaft.

THOMAS B. JEFFERY & CO.

of Kenosha, Wis., exhibit four models of Rambler cars and a polished chassis of their runabout.

The chassis, which in general design is similar to their older models, has many changes. The cylinder heads are now integral, the cylinder push rods are short and placed on top, the clutches are of a multiple disc type and run in oil and are all incased. Engine lubrication is by force feed. The frame is pressed steel. The automatic spark advance has been dispensed with, owing, it is stated, to the desire of the public to control the speed by retarding the spark. However, the present type is acknowledged to consume more gasoline. Means are provided for preventing the insertion of the starting crank until the spark is properly retarded.

The radiator is made up from a large number of parallel, horizontal, thin, flat tubes, several inches wide and only three-thirty-seconds inch thick.

The gasoline tank is placed under the bonnet, the engine and planetary transmission being located, as formerly, in the centre of the chassis.

The body, of the torpedo stern design, is hinged on the side to the frame, so that it is possible to tip it up sideways and obtain access to all the mechanism.

The Rambler touring car has a vertical, four cylinder engine, located under the bonnet. The cylinders are individually cast, with valves in the top and walking beam valve mechanism for inlet and exhausts employing one cam shaft.

Ignition is by four coil, jump spark, storage battery outfit, the plugs being located quite low on the sides. The oiler is driven by a coiled spring belt, which drives a coun-

tershaft crossing above, but to one side of the cylinders. The other pulley is mounted upon the fan shaft. The oiler is located in the dished dash and the fan is driven by a wide belt from the crank shaft.

The timer is mounted upon an oblique shaft driven by mitre gears from the cam shaft and located just above the pressed steel frame. The two to one gears are placed entirely separate from the crank case and are fully encased. The pump, of the centrifugal type, is mounted upon an extension of the cam shaft.

The engine is mounted upon a three point suspension. The transmission is by a sliding gear of the progressive type, said to be of an entirely new and light design.

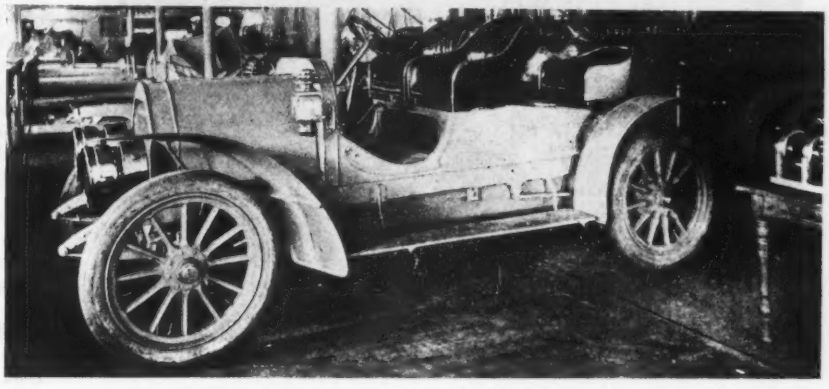
Bevel gear drive is used on the 25-30, four cylinder cars, and single chain on the smaller cars and double chain on the large ones.

THE MOORE AUTOMOBILE COMPANY have an interesting exhibit of their "ball bearing cars." It is claimed that every bearing having a rotary motion, with the exception of the connecting rod bearings, has ball bearings, and that the highest grade chrome-nickel steel is used wherever it is found advantageous to do so. The various parts, as pistons, connecting rods, crank shaft, change gears, etc., are spread out upon a table, where they furnish one with a good idea of the construction. The engine is of the four cylinder type and mounted on a three point suspension. The gear case is also mounted in the same manner. The bore and stroke are respectively 4½ and 5 inches, and the engine is rated at 40 horse power. The valves are placed on opposite sides, and are all mechanically operated. One unusual feature is the employment of three spark plugs in each cylinder, one over each valve, and the third in the centre of the dome. There are two high tension magnetos, one for each set of side plugs, while the centre one is sparked by a four coil and storage battery outfit. The engine is lubricated by gravity feed, the oil tank, in the form of a long cylinder, being supported by the dash and radiator, extending over the full length of the engine. The cylinders are oiled by the splash method. The fan is formed by the flywheel spokes. When running on the magnetos the spark is advanced automatically by a governor. Four switches are located on top of the steering post; one for each of the three ignition systems, any one or all of which may be used at once, while the fourth switch cuts them all out together. The clutch and throttle control are interlocking, so that when the clutch is withdrawn the engine is throttled to such an extent that it will not race. The carburetor, which is of the float type, is said to be automatic and self-compensating without the use of auxiliary valves, springs or diaphragms. The pump is centrifugal and runs on ball bearings, and is direct driven by the cross shaft that runs the cam shafts, the drive from the crank shaft being by spiral gears. The clutch consists of a light cone disc of chrome-nickel steel, and an expanding steel ring set out against the inner side of the clutch cone by a cam, which in turn expands the clutch disc against a chrome-nickel steel bushing keyed into the hub of the flywheel, the latter enclosing the complete outfit. There is a universal joint between the clutch and change gear. The propeller shaft is supplied with two such joints provided with ball bearings. Another unusual feature is that there is a jacket on the transmission brake, and the latter runs in a bath of oil.

The change gears are of the selective type, giving four speeds and reverse, with the direct drive on the third speed.

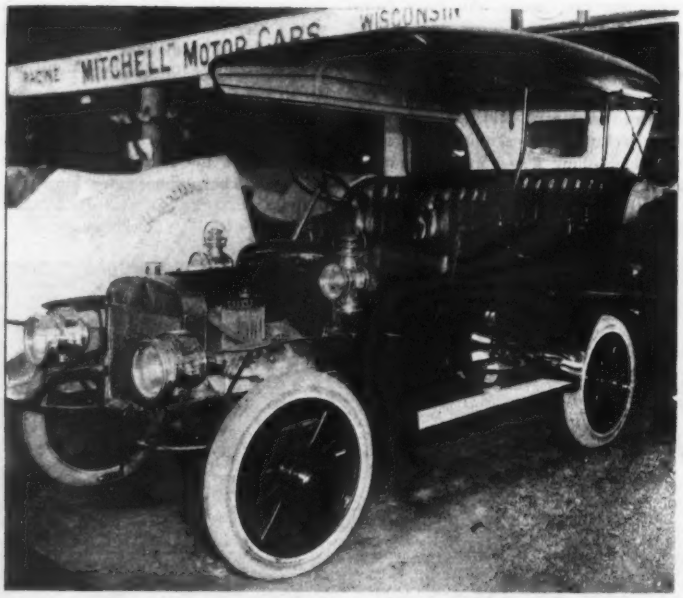
PALMER & CHRISTIE show various models of the Martini car, viz., a runabout, touring car, a limousine and an exhibition chassis. The motor has four cylinders, with make and break ignition. The gear box is a massive construction and is connected with the motor by a universal joint. The drive to the rear wheels is by double chain. The entire mechanism is protected by a metal apron extending nearly the whole length of the body. The control of this car is effected by means of four pedals, two side levers and two small levers moving over notched segments over the steering wheel.

AMERICAN MOTOR CAR COMPANY, of Indianapolis, show the "American Tourist," of rather conventional type, and the "American Roadster," a runabout possessing probably more radical novelties in general arrangement and design than any other car in the Show. The main frame, instead of being carried above the axles, is hung below them on half-elliptic springs, and in spite of this the road clearance is said to be 10½ inches. There are four cylinders cast in pairs, with all valves on one side. Ignition is by high tension magneto. This car is really a semi-racing model with very low seats and long, low body wth rakishly curved mud guards. The model shown carries a touring trunk back of the seats, and the gasoline tank, of liberal capacity, rests on the rear ends of the main frame between the springs. Owing to the sides of the car being carried well down at front and back, the machine presents a rather massive and solid appearance, although it is actually quite light for its rated power. The car



MOORE AUTOCAR WITH ALUMINUM BODY.

MOORE HINGED BODY.



THE FRICTION DRIVE CARTERCAR.

has been designed on rather close margins throughout. An instance of this is the fact that the top of the gear box appears through a hole cut in the footboard and forms part of the floor of the car. The transmission provides three speeds and the drive to the rear wheels is by propeller shaft.

WHITE SEWING MACHINE COMPANY.

The exhibit of White steamers consists of Pullman, touring, runabout, limousine and extension landaulette bodies on the Model G chassis and a Model H touring car—six types in all. The Model G is a 30 horse power machine and Model H a 20 horse power. In general appearance the same characteristics are shown as in the Model F of last season. Although the fundamental features of the White system are maintained, a number of noteworthy improvements have been made. Most important of these is the change in the system of regulation. The thermostat, instead of controlling the fuel supply as formerly, now controls an auxiliary water supply. The main water supply enters the generator by way of a new device called the Dow regulator. The water regulator is the same as has always been used on White cars. The action and interaction of these devices are such that the steam pressure will never, to an appreciable extent, rise above or fall below 600 pounds per square inch. Another new feature is a feed water heater. Although a common device in steam power plants, it has not before been embodied in these cars. There are sufficient differences in the details of the construction of the two models to warrant separate descriptions of each. The principal structural change in the engine is that there is now a piston valve on the high pressure cylinder, while the low pressure cylinder is provided with a slide valve as formerly. There are two pumps for supplying water to the generator, driven from an eccentric on the as used in previous models, although it is, crank shaft by means of a rocker arm. Similarly placed on the other side of the engine is another set of pumps, the upper supplying air to the fuel tank and the lower returning the water to the condenser from the tank. This set is similarly driven from an eccentric on the crank shaft. The method of arranging the two pumps last mentioned is different from that of last year's model. The condenser is of the same type of course, of much greater capacity proportionate to the larger generator and larger engine. Behind the condenser is a large four blade fan driven as follows: There is a chain drive from the crank shaft to a shaft running in two substantial ball bearings, located on top of the engine. From this shaft the fan is driven by a wide belt.

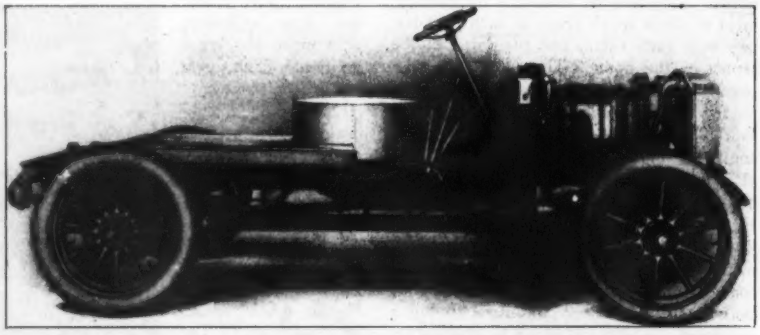
The oiler supplying lubricant to the engine and crank case is mounted on the dashboard. The oil receptacle is made of aluminum, is of large capacity and is fitted with glass gauges by means of which the amount of oil within is visible. The oiler is driven through a flexible coupling from the shaft on top of the engine, which, as mentioned in the description of the condenser and fan, is in turn driven by chain from the crank shaft.

THE MOTORCAR COMPANY,

of Detroit, show two models—Model E, with folding tonneau, and Model F, with a detachable tonneau; also a chassis driven by an electric motor. Their well known friction transmission is retained unchanged. In Model F, which is their new car, the wheel base has been increased from 94 to 96 inches, and the depth of the frame increased from 3 to 3½ inches. Front springs have been lengthened from 30 to 40 inches, and rear from 36 to 48 inches. The pressed steel dash has been replaced by a cast aluminum construction, and the bonnet has been changed to more nearly the conventional style for an opposed motor under the hood. The I section manganese bronze front axles are replaced by a tubular construction, and the pivots changed from Lemoine to Elliott type. The oiling system for the motor is changed, and a special Lavigne oiler is placed on the top of the crank case and feeds to all working parts. The straight valve push rods are replaced by downward hung levers. They show a photo of the Cartercar climbing a 50 per cent. grade at an exhibition during the Michigan State Fair.

THE PALAIS DE L'AUTOMOBILE.

This concern exhibits three Delaunay-Belleville cars, one 40 horse power and two 20 horse power, and two 35 horse power Panhards with limousine bodies. Such changes as have been made in these cars are principally in matters of detail and dimensions. In common with many of the other foreign cars they show careful finish and luxurious body work.



CHASSIS OF MODEL G WHITE STEAM CAR.

THE LANSDEN COMPANY,

of Newark, N. J., exhibit an electric runabout patterned after those of the gasoline type, including the divided seat and wheel

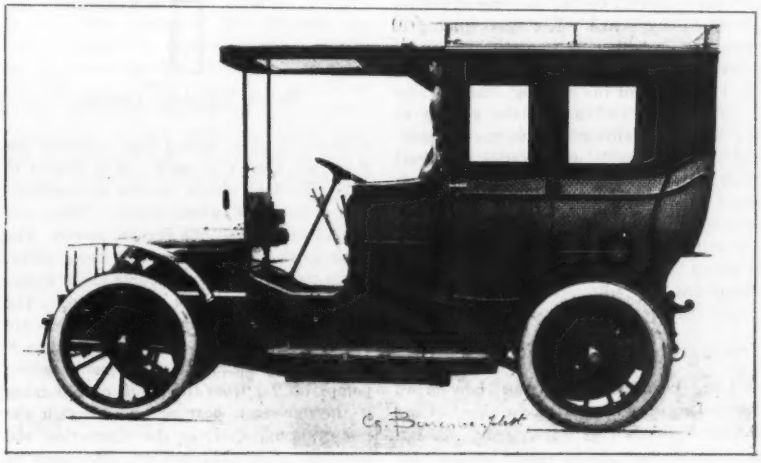
steering; also an Adams Express Company electric light delivery wagon. The runabout, named the "Electrette," has the 3½ horse power motor attached to the bottom of the body just forward of the rear axle. A chain drives from the motor to a differential countershaft, located about midway of the running gear, and power is in turn transmitted from the ends of this shaft to the rear wheels by a pair of chains and sprockets. The battery box is attached under the forward part of the frame, reaching nearly to the front axle, which is practically flush with the front of the frame.

The seats are placed at the extreme rear, over the axle, while a long bonnet covers the battery receptacle in front, and furnishes a space above the batteries for storage purposes. A phaeton top covers the seat. No meters are used. A clock and an odometer are supplied, however. The controller furnishes four speeds forward and two reverse, operating entirely upon the motor, in combination with a rheostat, the batteries always being kept connected in series. The frame is of the armored wood type. The springs are semi-elliptic, and the axles are solid forgings. The brakes are of the internal expanding type, acting directly upon the rear hubs. The battery equipment consists of 60 E18 Edison cells, which are claimed to give speeds up to 25 miles per hour, and a distance of 50 to 60 miles per charge. The weight is 1,950 pounds. The general principles of the express wagon design are similar to that of the runabout, minor differences in the truck being that the battery box is mounted in the centre of the chassis, that the motor is attached under the seat, and that the countershaft passes through the forward end of the battery box. A vertical steering post is surmounted with a wheel, and the controller lever swivels on the post. The battery is the same as on the runabout, consisting of 60 E18 Edison cells.

LANSDEN ELECTRETTE.

CHARRON, GIRARDOT & VOIGT,

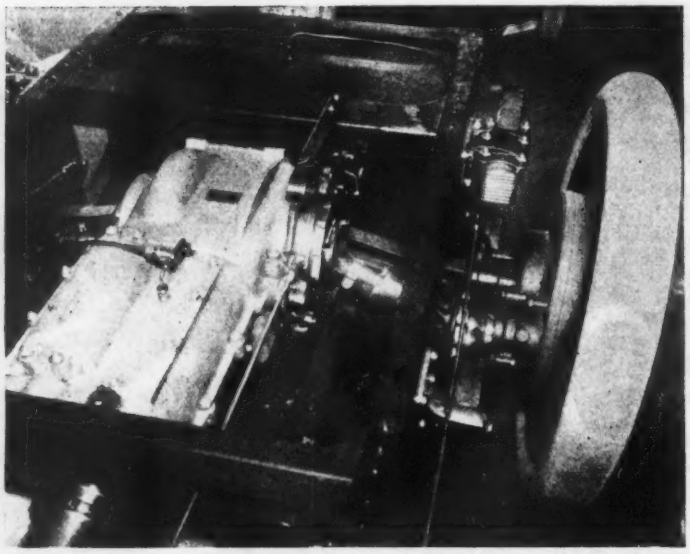
This concern display five cars, the appearance of which is characteristic on account of the sloping front of the hood with the underhung radiator between the front spring horns. The motor of this car, when the hood is raised, presents a very clean-cut and compact appearance. The cylinders are individual, and the water jackets where the cylinders adjoin are cut away and the apertures covered with flat plates, permitting a very close arrangement of the cylinders. The large trunk exhaust pipe found on a good many cars this year is noticed on this machine. A town carriage of a model new this year, with a four cylinder motor cast in one piece, is also exhibited. The valves are all on one side. The top of the cylinder casting is cut away and a steel plate is screwed on, forming the top of the water jacket.



CHARRON, GIRARDOT & VOIGT LIMOUSINE.

BERTELLI & CO.,

144 West Thirty-ninth street, New York, show the Zust automobiles, which for 1907 show several modifications from last year's pattern, although these are more in the way of detail than in the line of radical alteration. The engine is rated between 40 and 50 horse power, and has all the valves on the same side of the cylinders, these being cast in pairs. In the valve caps are arranged large locked set screws, which serve as adjustments for the compression in the various cylinders, a refinement exclusive with these machines. The carburetor is practically the same as in the case of the 1906 model, having an adjusting screw above the gasoline jet. The spray chamber is now water jacketed, however. The magneto is on the opposite side of the engine to the carburetor and is driven through the medium of a flexible coupling from one of the forward gears of the engine. The pump is driven by a gear combination from the magneto shaft and lays almost directly beneath the magneto itself, delivering thence to a branch pipe connected directly to the cylinder heads. The magneto tappet gear is being considerably lightened, and although the magneto plugs have the same general design as heretofore the return springs are made longer to give increased life. The clutch is a small specimen of the multiple disc type, but there is a particularly neat arrangement incorporated for lubricating the clutch shifting yoke, consisting of a loop pipe connected with a grease cup with a screw-down cap. The transmission is of the Mors type, having a direct drive on the fourth speed by means of a



1907 PILAIN CHASSIS.

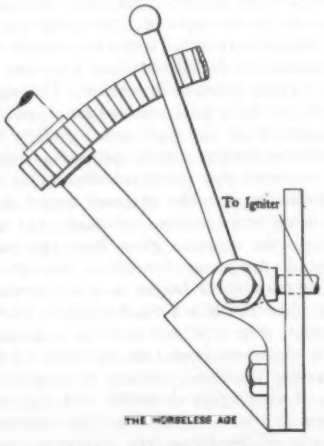
Showing the transmission and shaft with universal joints, which drives by spur gears on the wheels.

second bevel gear; but refinement in changing is introduced by the use of a spring controlled lock on the shifting rod that materially aids the motion of the lever as it is moved through the different speeds.

The radius rods also exhibit more care in design and greater facilities for adjustment, while all the brakes are now operated by means of tension rods instead of by wire cable and compression connections. as in former models. The countershaft has two brakes of a contracting pattern mounted on it and arranged to operate upon drums secured to either side of the differential shaft, these brakes being anchored to a rigid cross member of the frame.

DELAHAYE & CIE. AND SOCIETE PILAIN

are represented by the same agents, who exhibit stripped chassis of both machines.



PILAIN SPARK CONTROL.

The Pilain car has several novel features and attracts considerable attention. The four cylinder motor has inlet and exhaust valves on opposite sides, and ignition is by make and break. The carburetor is arranged so as to cut off the air supply entirely when desired, creating a vacuum in the inlet pipes and causing the motor to act as a brake. The throttle is controlled by a small lever moving forward and back over a housing carried on the steering wheel, as shown in the sketch. The spark timing is controlled in rather an unusual manner by a lever moving over a notched segment on the lower part of the steering column. The drive from the jackshaft of the gearing to the wheels is effected by means of individual short shafts with double universal joints, one for each wheel, connecting with small pinions engaging large gears on the wheels. Great stress is placed by the makers on this form of drive. They state that it solves the problem of transmission arrangement.

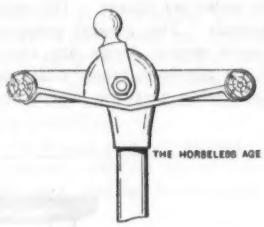
The American Mercedes, made by

THE DAIMLER MANUFACTURING COMPANY,

of Long Island City, does not show many changes made during the past year. They exhibit a polished 45 horse power chassis, a 70 horse power, eight seated touring car, and a 45 horse power touring car. The engines are four cylinder, cast in pairs, with valves on opposite sides, and have low tension magneto ignition, the magneto being gear driven from the cam shaft. The centrifugal pump is also similarly driven from the other cam shaft, both being located at the front of the engine. The fan is belt driven from a pulley, which is gear driven from the two to one gears. These gears may all be exposed by the removal of a face plate. To relieve the compression the cam shaft is shifted forward, which brings in a cam to open the exhaust longer. The clutch is of the coiled strap, or spring, type inclosed in the hub of the flywheel, the spokes of the latter forming fan blades. The change gear is of the selective type, with a water jacketed brake upon the second shaft. The hub brakes are internal expanding. Double chain drive is employed. The gasoline tank is just forward of the rear axle and sets below the frame, air pressure being supplied by the exhaust and an auxiliary hand pump. Pipes lead from the multiple feed pressure oiler to all bearing parts. The springs are semi-elliptic front and rear. Chrome-nickel steel is used throughout the mechanism, and all brass plated parts are hand plated with sheet metal. The radiator is of the typical honeycomb type.

THE BERKSHIRE AUTOMOBILE COMPANY,

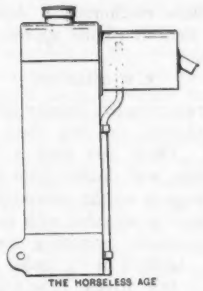
of Pittsfield, Mass., exhibit a touring car and a runabout chassis. The latter is of 25-40 horse power, four cylinders, individual type. The valves are on opposite sides, and a centrifugal pump is geared to the cam shaft. Ignition is by magneto and a four coil jump spark system, the timer being mounted upon a vertical shaft above and between the two rear cylinders. The clutch is of the multiple disc variety. The trans-



PILAIN THROTTLE CONTROL.

mission is of a special type wherein the gears are always in mesh. It is similar to the individual clutch system in combination with the flywheel clutch. There are three forward and one reverse speeds. The drive to the rear wheels is by cross differential countershaft and double chain equipment. The frame is of pressed steel. The springs are semi-elliptic. The axles are nickel steel I beam section. The engine is lubricated by means of a gear pump, which pumps the oil from the crank case, forcing it through each bearing and through the hollow crank shaft to the connecting rod bearings. The cylinders are lubricated by splash. Steering is by worm and sector. Internal expanding brakes operate on the wheel drums, while an external band acts upon the jack shaft drum. The radiator is a special design of the cellular type. The dash is aluminum, of the dished design. In addition to the coils, etc., it also contains two side lockers for carrying waste, oil can or small tools, which should be found very convenient. The steering knuckles have their yokes integral with the stub axles.

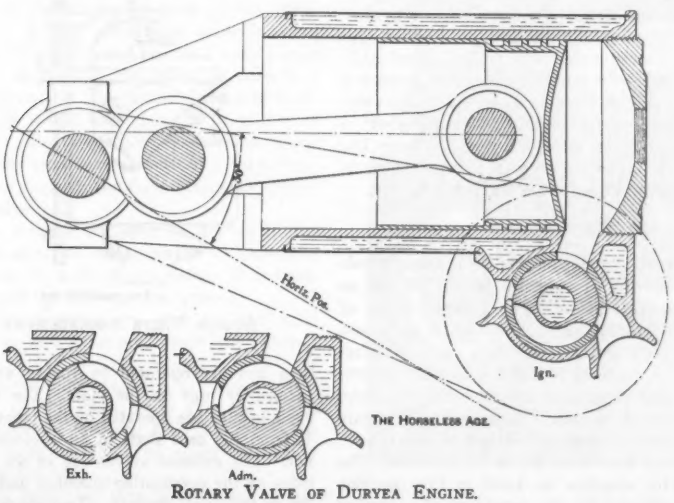
THE NAPIER COMPANY OF AMERICA display two cars of their new six cylinder model and one four cylinder light car. The two cars show close and careful workmanship and design. The length of the motor, dimensions considered, has been kept within moderate limits. In order to provide the considerable cooling capacity necessary the radiator tank is provided with a rearward extension, as shown in the sketch. This has an overflow pipe leading



NAPIER RADIATOR.

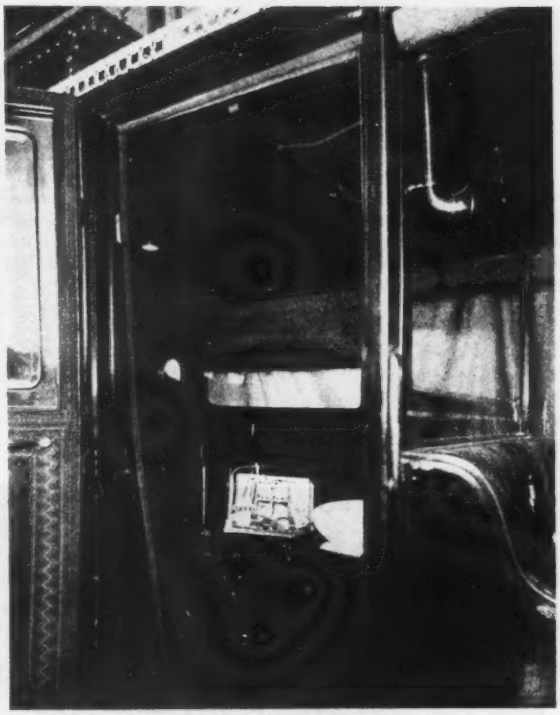
to near the top of the inside of the tank, and carried down to the bottom of the radiator. A single ignition system is employed. The sliding gear gives three speeds, with direct drive on the high. A pressure gauge mounted on the dash shows the pressure in the oiling system.

THE DURYEA POWER COMPANY, of Reading, Pa., exhibit models which are practically unchanged from those of former years. They show a folding rear seat phaeton, also a chassis of the same model, and a complete double victoria phaeton. In the first mentioned the steering has been changed by substituting bell cranks on the post for the chain and sprocket formerly used. The magneto is moved up to the top of the flywheel to keep it away from mud. A new make and break ignition system is fitted. It consists of a stationary insulated electrode in the chamber between the exhaust and inlet valve, against which the movable electrode is pressed by a spiral cam acting on a spring. When this spring drops off the cam it acts as a hammer to separate the sparking points. The movable electrode passes through the exhaust valve stem as formerly. In the double victoria a three cylinder 5x5 inch motor is used, of typical Duryea construction, with the exception of the valves, which are rotary. A single long cylinder is rotated at half the motor speed by a Morse silent chain. It is hollow and water cooled inside and out; it is oil packed, the oil being supplied at each upward stroke of the piston. Inlet and exhaust pass through appropriate parts 3 inches long, and approximately chordal in the section of the valve. This gives an absolutely silent valve and very quick opening, and nearly straight gas passages. Sheet copper water jackets surround the cylinder groups and extend the whole length of the cylinders.



ROTARY VALVE OF DURYEA ENGINE.

THE OSCAR LEAR AUTOMOBILE COMPANY exhibit a 50 horse power touring car, a limousine runabout, a truck and a polished chassis, the three latter cars all having the



INTERIOR OF DELAHAYE LIMOUSINE.

standard 24 horse power engine. The chassis is a 24 horse power outfit. The Frayer-Miller system of cooling is too well known now to require a description. The engine of the 50 horse power chassis is four cylinder, 5½x5⅛ inches, with horizontal valves on opposite sides of a chamber located on top of the head. They are all operated from one cam shaft, those on the opposite side from the cam shaft being worked by oblique rods passing between the cylinders. The cam shaft is driven from a gear located on the centre of the crank shaft. Upon the front end of the cam shaft a gear is mounted that meshes with the magneto gear; the rear end of the cam shaft is supplied with a grooved pulley which drives by belt the multiple oiler which is placed upon the rear of the dash. In addition to the high tension magneto, a single coil storage battery outfit is supplied for emergency or starting purposes. The clutch is of the expanding ring type. An internal and an external gear of equal pitch diameters, meshing with each other, form the universal joint between the clutch and the gear case. The sliding gear is of the selective type, four speeds forward and one reverse, direct on the high. The propeller shaft is supplied with two universal joints on the Cardan type. The rear wheel ball bearings are located inside the hubs, so that the driving axle "floats." The brakes are internal and external on the rear hubs. The frame is pressed steel. The full elliptic springs are of an unusual type,

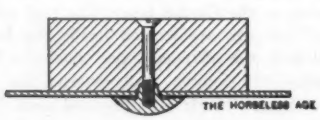
FRAYER-MILLER SPRING.

being in the form of a scroll at the ends. The wheels are 36 inches diameter and the total weight of car is about 2,750 pounds. Steering is by worm and sector. The throttle and spark control are placed on top of the steering wheel.

The 24 horse power truck is the regular touring car model, supplied with a truck body, with changes in frame and wheel construction to suit the different conditions. The wheels are double chain driven from a cross countershaft. The rear wheels are shod with 5½ inch solid rubber tires, while the front ones are 3½ inches. Platform springs are used at both front and rear.

J. M. QUINBY & CO.

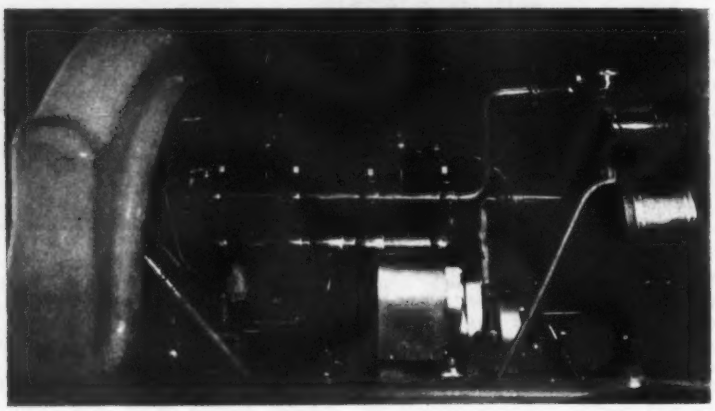
This company, so long connected with carriage building, and later with automobile body work, have now taken the New Jersey agency for the Fiat, Mercedes, Renault, S. & M. Simplex and the Panhard. They exhibit full touring car bodies on a 1907 50 horse power Matheson and 35 horse power Fiat, and also a luxuriously appointed limousine on a 30 horse power S. & M. Simplex. The particular feature of their construction consists in the method of priming the joints in the aluminum shell which is over the wood. This consists in making metal beading in continuous strips with brazed joints. These cover the aluminum joints and are held by screws at equal intervals from the inside, which are threaded with the bead, thus giving it a vise-like grip on the aluminum and making a neat, durable, water tight joint.



QUINBY PATENT BEADED JOINT.

THE NATIONAL MOTOR VEHICLE COMPANY,

of Indianapolis, have one of the largest exhibits at the show. They exhibit one 40 horse power runabout, with rumble seat; one Model H 50 horse power touring car; one Model L six cylinder, seven passenger touring car, and a Model L nine passenger limousine; also a Model H chassis. The changes in these models from last year's plan of construction are not extensive outside of the motors, which are now built in their own shop after their own design. A ball bearing crank shaft for the six cylinder motor is exhibited. It is impossible to give a detailed description of the motor at present, but we will do so in an early issue. The method of holding both gas and water manifolds to the cylinders by the same yokes is novel, and makes a very neat arrangement. All models have longer wheel bases, and the change gears are of the selective types, where in 1906 progressive type gears were used. The typical round radiator has been retained. Magneto ignition is used, and in addition to the spark governor a hand control from the steering wheel is fitted to give positive control at very low speeds. The cover to the change gear is hinged to the case and so cannot be lost.



NATIONAL FOUR CYLINDER ENGINE.

Notice method of securing inlet and water pipes.

THE MERCEDES IMPORT COMPANY

show two limousine models and one standard touring car with the bonnet off, but no exhibition chassis. The general design of the Mercedes seems to be fixed, and there are no radical changes this year. Characteristic features of the machine are selective gear change; double chain drive; make and break ignition. This year a new carburetor is fitted, the details of which have already been described in our columns. The careful attention to detail in this machine is indicated by the provision of a leather sheath, which completely covers the magneto, presumably for protection against dirt and electrical disturbances. The radiator connections in this car are made by means of rubber tubing.

RENAULT FRERES AMERICAN BRANCH

exhibit two Renault limousines, both of their well known type, characterized by the hood, which slopes toward the front, and the radiator in the rear of the engine. There are no radical changes in construction of these machines. A description of the new Renault engine appears elsewhere in this issue.

E. B. GALLAHER

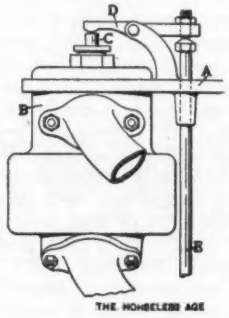
exhibits two complete Brasier cars, one exhibition chassis, and one coach body dismounted. These cars have a four speed transmission, with double chain drive. The speed change is on the progressive system. The radiator is provided with an extension to the reservoir, providing ample water capacity. Ignition is by make and break. The fan is belt driven. The axles on this car are solid bars instead of the structural shape usually employed. The car is fitted with sprags.

E. W. SUTPHEN,

representing the English Daimler Company, shows two cars, which are characterized by a peculiar radiator which has vertical finned tubes and integral cooling flanges cast on the reservoir at the top. No stripped chassis is shown. The changes from last year are principally matters of detail.

AUSTIN AUTOMOBILE COMPANY

exhibit two touring cars which have four cylinder motors with valves all on the same side. The valve arrangement is novel, and is shown in the accompanying sketch. For each pair of cylinders there is a plate A secured on top of the inlet valve chambers B by nuts. The inlet valve tappets C project through the tops of the inlet chambers and are operated by rocker arms D carried by lugs on the plate. The rocker arms in turn are operated by the tappet rods E from the cam shaft in an obvious manner. The exhaust valves are in the lower sides of the combustion chamber and operate in the usual manner. Two spark plugs



AUSTIN VALVE ARRANGEMENT.

are used in each cylinder, with batteries and magneto.

EVANSVILLE AUTO COMPANY,

of Evansville, Ind., show the friction drive "Simplicity" car and also the chassis for the same, with the transmission belt driven by an electric motor to show its method of operation. This car is but little changed. A space for tires under the tonneau floor has been added, and the brakes are operated by rods instead of cable. The 4⅝x5¾ inch, 40 horse power motor is still supported by a large tube, which passes crosswise through the middle of the crank case. Their friction transmission, consisting of two large, mineral tanned, leather faced discs on the motor shaft and two steel wheels on the countershaft, is retained unchanged. The speed is changed by a small wheel under the steering wheel, which is cable connected to two rockers, between which is a spur gear, which insures that the rockers will have an equal movement. The side chains are unusually long. The wheel base is 105 inches and the wheels are 34x4 inches.

EVANSVILLE SIMPLICITY CHASSIS.

THE LANE MOTOR VEHICLE COMPANY

exhibit two touring cars of the steam variety.

The boiler is of the semi-flash type and furnishes steam fully superheated under all conditions. The burner is made entirely of tubing and is claimed to be indestructible; the tube ends being free, no part can be injured by expansion.

The flame jets are in straight rows, separated by narrow air passages. The igniting torch is a perforated tube enclosed in an absorbent, non-combustible casing. A cup conveniently located outside the burner connects with the tube.

The engine is a cross compound, with 3¼ and 5¼ inch cylinders, both having a stroke of 3½ inches; both the steam chests have slide valves and are located between the cylinders. The device for changing from compound to simple acting, so as to obtain the maximum power from the engine, is located on the back of the steam chests. A one piece plug valve is fitted into a small cylinder provided with proper ports, so that as the valve is rotated it first places the high and low pressure cylinders in series, and then, as it is turned farther, they are placed in multiple, which gives the maximum power. A push rod extending through the floor serves to operate the valve.

The crank shaft, with the eccentrics, flywheel, sprocket discs, cranks and counterbalances, is made in one piece. It is hardened and the bearings are ground.

Roller bearings are used for the main bearings and wrist pin, while ball bearings are provided for the eccentrics. The air and water pump plungers are operated directly by the cross-heads and are placed inside the oil case and kept thoroughly lubricated by splash. The pump valves are outside the case.

They state that they have found by experience that the piston and valve rods carry enough oil into the cylinders so that special piston lubrication is seldom necessary, which greatly aids the condensation problem, as there is less oil to be gotten rid of. They state that engines running five years by this method are still in perfect condition. They provide, however, a pump oil cup on the dashboard with steam pump and engine connections, so that oil may be introduced if necessary, as after standing idle long periods.

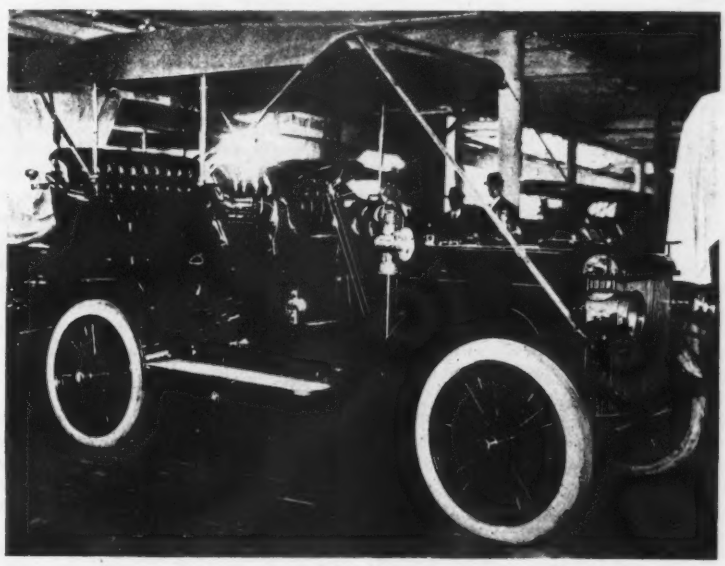
There is an automatic bypass operated thermostatically according to the water level; a hand bypass is also provided. The fuel tank air pressure is kept up by the engine pump, which runs continuously, but the pressure is kept constant by the clearance space, which is adjustable. An independent pump is provided for inflating tires.

The condenser is made up of thin, flat, brass tubes standing vertically and connected in multiple at the top and bottom.

The boiler is located under the bonnet, so that there is no heat under the seats. The engine, however, is located in the central part of the chassis and drives to the rear axle by a typical bevel gear system. The brakes are of the external band type. Semi-elliptic springs are used on both axles.

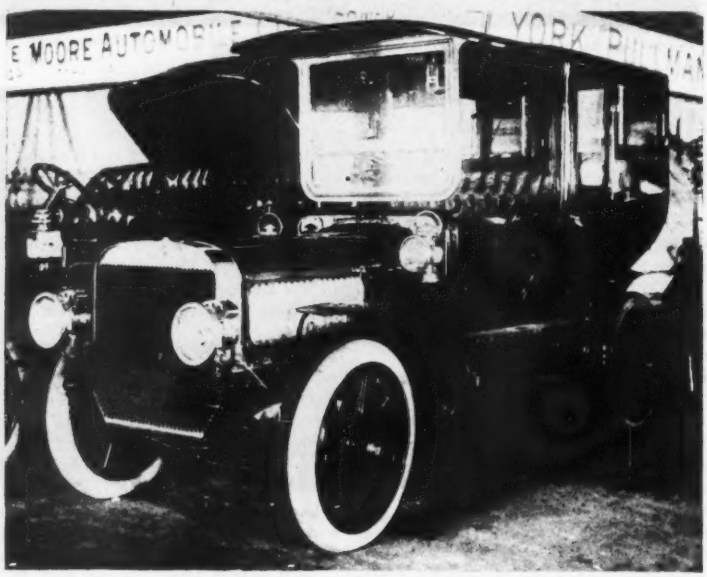
THE JOHNSON SERVICE COMPANY,

of Milwaukee, Wis., have two finely finished cars on exhibition, one a touring car and the other a limousine. They designate them as "the steamless steamer." The appearance throughout is very similar to their gasoline prototypes. The engine has four cylinders, with single acting trunk pistons, and is placed under the forward part of the bonnet, the boiler occupying the rear



1907 LANE STEAM TOURING CAR.

half. A large round tube, honeycomb type radiator in front serves as a condenser. The boiler is of the semi-flash type. The condition of the fire may be observed at any time through a glass plate and mirror located in the footboard of the floor. Three hand wheels surmount the steering post, the lower one for throttling and the upper one for reversing, while the large middle one is used for steering. The car has a great many thoughtful details worked out for the convenience of the operator. The drive to the rear axle is by means of a typical Cardan shaft and bevel gear. A two speed forward and two speed reverse gear and clutch is used after the manner of gasoline cars. They are operated by foot pedals.



THE 1907 JOHNSON STEAM LIMOUSINE.

THE MAXWELL-BRISCOE MOTOR COMPANY, of Tarrytown, N. Y., exhibit their line of cars. As these models have already been fully described in our issues of August 18 and November 28, we will confine ourselves to changes and a description of the exhibit. They show one doctor's Maxwell, with top; a 20 horse power touring car and a polished chassis applicable to these two models. These cars have a 5x5 opposed motor crosswise in front, and are shaft driven through a sliding change gear. External and internal brakes are applied to the rear hubs, where in 1906 only external were used. The tonneau is 3 inches longer and 2 inches wider. They also exhibit two 14 horse power models, the speedster and a runabout with top, and a polished chassis for the same. One wheel of this chassis is elevated to show the flexibility of the gear. In these models the bore of the motor has been increased from 4 to 4½ inches, while the stroke remains 4 inches. Model M, their new four cylinder touring car, completes the exhibit. In this model the Maxwell unit power plant system is applied to a four cylinder, 5x5 inch, 40 horse power motor. Multiple disc clutch and three speed and reverse sliding change gear are used. The power is transmitted by the usual shaft drive, with two universal joints. The wheels are 34x4 inches and the wheel base is 104 inches, with the tread standard. Both the front and rear springs are semi-elliptic. Painting and upholstery are in keeping with the rest of the car.

THE DETROIT AUTO VEHICLE COMPANY, of Detroit, Mich., show two entirely new models—a touring car with Cape top and a runabout with rumble seat. Besides these complete cars they exhibit a painted chassis, which is the same for both models. These cars are a well grouped assemblage of standard parts offered at a low price. A 5⅛x4½ inch, 22-24 horse power opposed motor is mounted crosswise in front, and by a cone clutch of special design with unusually large angle drives a three speed and reverse Brown-Lipe sliding change gear. The motor, change gear and driving shaft make a straight line to the rear axle, and the driving shaft has two universal joints. The rear axle is the American Roller Bearing Company's make. A pressed steel frame hung on semi-elliptic springs is used. The wheel base is 96 inches, tread 56 inches, and the wheels are 32x3½ inches. Both sets of brakes are on the rear hubs, and both are equalized.

THE WAYNE AUTOMOBILE COMPANY, of Detroit, Mich., exhibit four cars—one Model N touring car, a Model N runabout, a Model R seven passenger touring car and a Model K. Model R is a 50 horse power car with Pullman body, 117 inch wheel base and 34x4½ inch wheels. The car is hung on semi-elliptic springs; the front are 40 and the rear are 60 inches long. The car is shaft driven throughout, three speed and reverse sliding gear. Model K is a five passenger touring car with a 35 horse power, four cylinder motor, three speed and reverse sliding gear and shaft drive. It has 32x4 inch wheels and semi-elliptic springs, front 40 inches and rear 50 inches long. The wheel base is 102 inches. Model N is the latest Wayne production, and was described in a recent issue. It is a 30-35 horse power, four cylinder car, with expanding clutch, and change gear on the rear axle. Wheels are 34 inches in diameter, shod with 3½ inch tires in front and 4 inch in the rear. It has a weight of 2,400 pounds and a wheel base of 106 inches. A finely polished chassis of this model is also shown.

THE TRIUMPH MOTOR CAR COMPANY, of Chicago, show one of their runabouts, known as Model A. It is driven by a 4¼x5 inch four cylinder motor rated at 30 horse power. It has a multiple disc clutch and three speed and reverse selective sliding gear. Drive to the rear axle is by shaft. The wheels are 36 inches in diameter, the front ones being fitted with 3½ inch and the rear with 4 inch tires. The wheel base is 108 inches, and the tread is 54 inches. The spring support is semi-elliptic; the rear springs being 55 inches long, the front 40 inches, and both sets are 2 inches wide. The most interesting feature of the car is the self starting device. The valves to this motor are all on the left side, and over the exhaust valve for the second cylinder is placed a pressure reducing valve with about a 200 pound spring. The explosion pressure in this cylinder rises to 300 pounds, and hence permits about 100 pounds' pressure to pass by the valve through a pipe into a tank under the seat. By pressing a pedal three things are done—connection to the carburetor is shut off from the first two cylinders, the outlet from the compressed gas tank is opened to these cylinders, and the cam shaft is slid endwise, throwing a new set of cams under the valves of the forward cylinders and giving these the action of a compressed air engine; the rear cylinder cams change slightly so as to lower the compression. The action of the compressed gas in the forward cylinder now starts the motor, while the two rear cylinders acting as usual (except for the decreased compression) continue the engine in motion. After a predetermined speed is reached the cam shaft shifts automatically to its normal position.

THE TORBENSEN MOTOR CAR COMPANY, of Bloomfield, N. J., show a single chassis for a delivery wagon of 2,000 pounds carrying capacity. The chassis frame is of angle iron, as is the sub-frame, upon which is mounted a double opposed 5⅛x4½ two cylinder engine, crosswise of the frame. Either air or water cooled cylinders are fitted to the same crank case as preferred. All valves are interchangeable and mounted in easily removable cages. The power plant is mounted at an angle and drives through a long shaft to a planetary transmission mounted on the rear of the sub-frame and a special bronze channel casting supported

from the rear axle. Jack shafts drive through spur gears mounted on the rear wheels. The wheel base is 86 inches and the tread 56 inches. The wheels are shod with 32x3½ Firestone tires in the rear, and 32x3 inches in front. The rear springs are three point platform and the front semi-elliptic, with an auxiliary bolster spring mounted on the frame and acting under excessive jounce. The rating of the engine is 16-18 horse power.

YORK MOTOR CAR COMPANY,

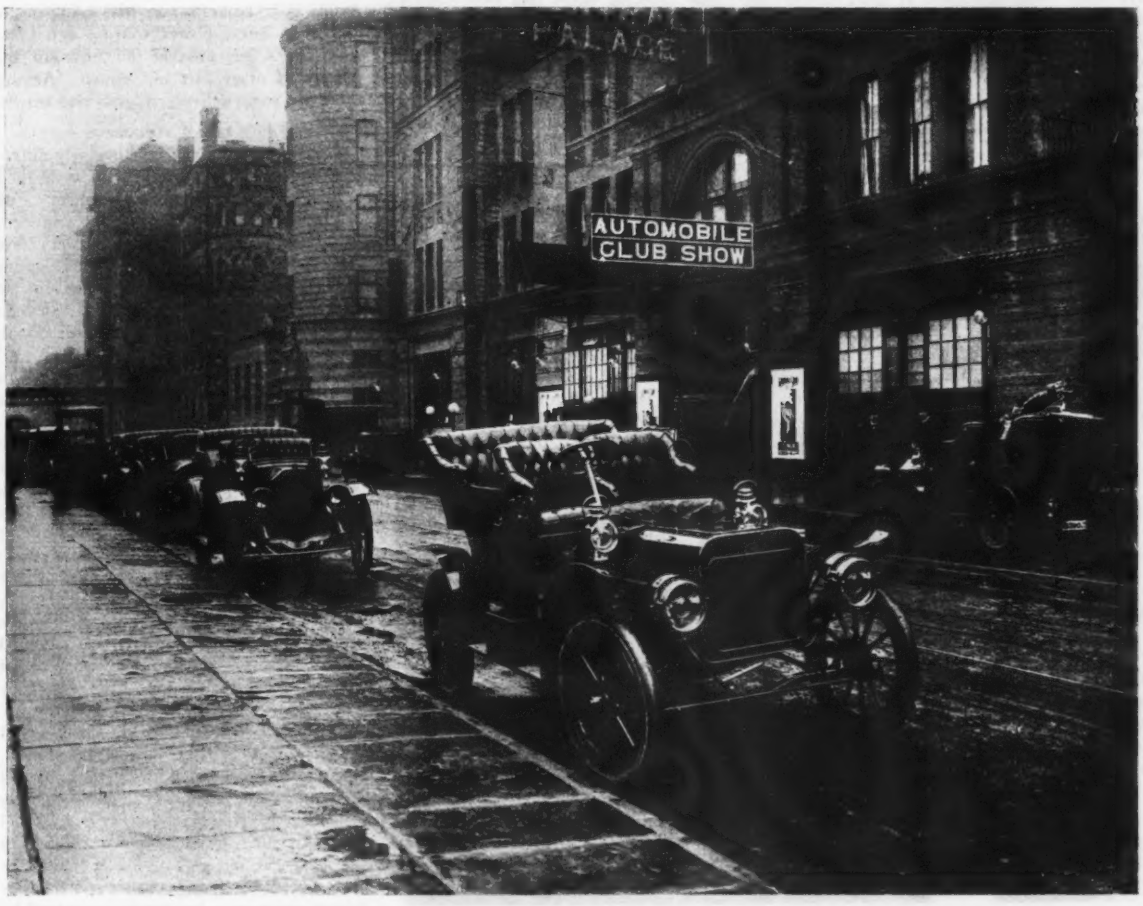
York, Pa., show two polished chassis and two standard touring cars. Two models are exhibited. The Model E is a 20 horse power car, similar to last season's product, with a few changes. The Model G is new, and is similar in general design to the smaller car, and is rated as 40 horse power. The improvements suggested by last season's experience are the substitution of pressed steel frame members for armored wood, the frame in the larger car being of nickel steel. The braking surface has been increased in the small car, and the service brake is now on the wheel rather than the transmission mechanism. The large car has both brakes on the rear wheel, and is equipped with a dual ignition system. The smaller tonneau is removable. Another model is also offered similar to Model G, with a different style body and battery ignition only.

THE RAINIER COMPANY,

of New York, have one of the largest and most imposing exhibits. There are shown a polished chassis, a road racer, two standard touring cars, two limousines, and a landaulette—seven cars in all. To the casual observer the general design is unchanged from last year. Inquiry shows this to be true, as only a few details have been found necessary to change, the most important of which is perhaps the spring suspension using a three point platform spring in the rear to replace the semi-elliptic. The cars are known as Models C, and outside of the bodies are practically standard, excepting the road racer, which has a special chassis construction and gearing, using the standard 30-35 horse power engine. A distinctive feature is the elegance and care displayed in the design and finishing of the different bodies shown. One of the limousines is "convertible"; that is, the door and a part of the side panel above the rear seats can be removed and a half length door substituted, so that an elegant semi-enclosed or "sheltered phaeton," as it is called, results. One limousine is shown upholstered in a light colored tapestry, which makes a pleasing contrast to the other cars richly upholstered in leather. The general design and finish of the entire exhibit is very pleasing.

THE DAYTON MOTOR CAR COMPANY,

of Dayton, Ohio, exhibit a limousine, a runabout and a polished chassis, with their four cylinder engine equipments. The cylinders are cast in pairs, with the spark timer rising between them, operated by mitre gearing from the cam shaft. The valves are located on opposite sides of the cylinders, the spark plugs being over the inlets. Four coils and storage battery furnish the spark. The cam shaft gears are rawhide, and the tappets are fitted with fibre striking faces, which materially help in reducing the noise. The cam gears are all encased. The pump, of the centrifugal form, is gear driven from the exhaust cam shaft. The clutch is of the cone type. The slide gear is selective, and the countershaft is placed below the main driving shaft. The drive is direct in the high gear. A Cardan shaft, with two



VIEW OUTSIDE THE GRAND CENTRAL PALACE.
Looking down Lexington avenue.

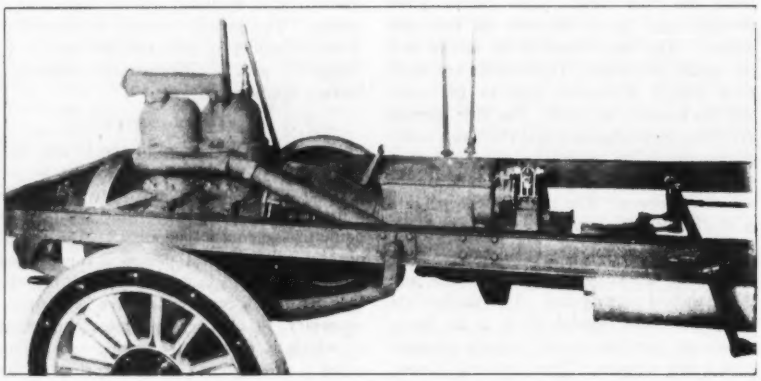
universal joints, connects from the gear case to the rear axle, where a typical bevel gear drive is used. Internal expanding brakes are used on the hubs and at the rear of the transmission. The axle is of the floating variety; all springs are semi-elliptic, and the frame is of pressed steel construction.

THE MOON MOTOR CAR COMPANY,

of St. Louis, exhibit an entirely new model, and offer many unusual features in its design. Space permits mentioning only a few of these. The car is shaft driven by a four cylinder, vertical 4½x4½ inch motor, with cylinders cast in pairs and the cam shaft on top driven by bevel gears. The valve mechanism is new, and consists of a three arm rocker lever, of which the short arm carries a roller and is operated by a double cam of the notch and point type to open both the inlet and exhaust valves. The valves are of course in the head, and open downward, with their axes on a slight angle. The cam shaft extends through the dash, and the timer is mounted on its rear end. The pump is mounted with its shaft vertical, and is driven by spur gears from the cam driving shaft. A multiple disc clutch and a four forward and reverse selective sliding gear are used. The rear axle is shaft driven, and the rear wheels are 34x4½ inches and the front 34x4 inches. The front springs are semi-elliptic, 36 inches long, and the rear full elliptic, 38 inches. All brakes are on the rear hubs, and the band brakes are of an entirely new type, being absolutely double acting.

B-L-M MOTOR CAR COMPANY

show one car of the racing type, with very large cylinders, having valves all on one side. The speed change is by sliding gear carried on two transverse shafts, the front one being driven from the clutch shaft by bevel gears, and the rear connecting with the rear wheels by double chain drive. With this gearing there is no direct drive. The gears are shifted by a lever moving in an H slot.



ATLAS TWO CYCLE ENGINE AND TRANSMISSION.

THE HARTFORD SUSPENSION COMPANY

exhibit one Gobron-Brillie car, equipped with their own well known shock absorbers. This car has four cylinders cast in pairs, each pair being surmounted by an oil tank with connections to the crank case and bearings. The car has a luxuriously fitted limousine body, with a capacity for five people. A Colonial effect is given to this carriage by dividing the rear side windows of the body into small panes.

ZIM-ROCK MOTOR CAR COMPANY,

1853 Broadway, are selling agents for the "Pungs-Finch" line of cars. They are exhibiting a standard touring car of 35-40 horse power, fitted with Cape top, with double celluloid windows in the rear. The body is large and well upholstered, and the front seats are divided. They also show their 24-30 horse power torpedo back type of runabout.

WOODS MOTOR VEHICLE COMPANY,

2521 Calumet avenue, Chicago, Ill., show a line of electric pleasure carriages. There are a new French style brougham, an extension landaulet, a Queen Victoria, with convertible body, by means of which a brougham body results; the same carriage in the victoria style, and a victoria chassis with body unfinished and in the rough.

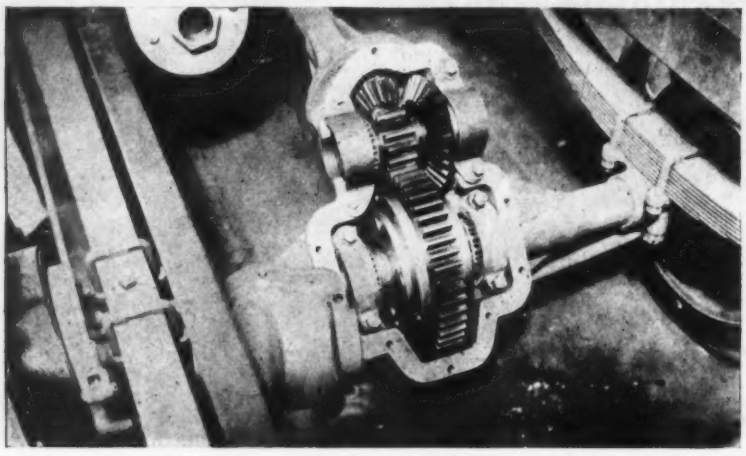
There is also shown a 40 horse power gasoline touring car, with a few detail improvements over last year, the most important being a dual ignition system.

THE ARGUS IMPORT COMPANY,

17 East Thirty-fourth street, New York, show two models—a polished chassis of an Argus 45-50 horse power, four cylinder car and a 24 horse power touring car. Besides the Argus product this firm are importers of other cars not shown. Among these are some delivery wagons and trucks.

THE LOGAN RUNABOUT.

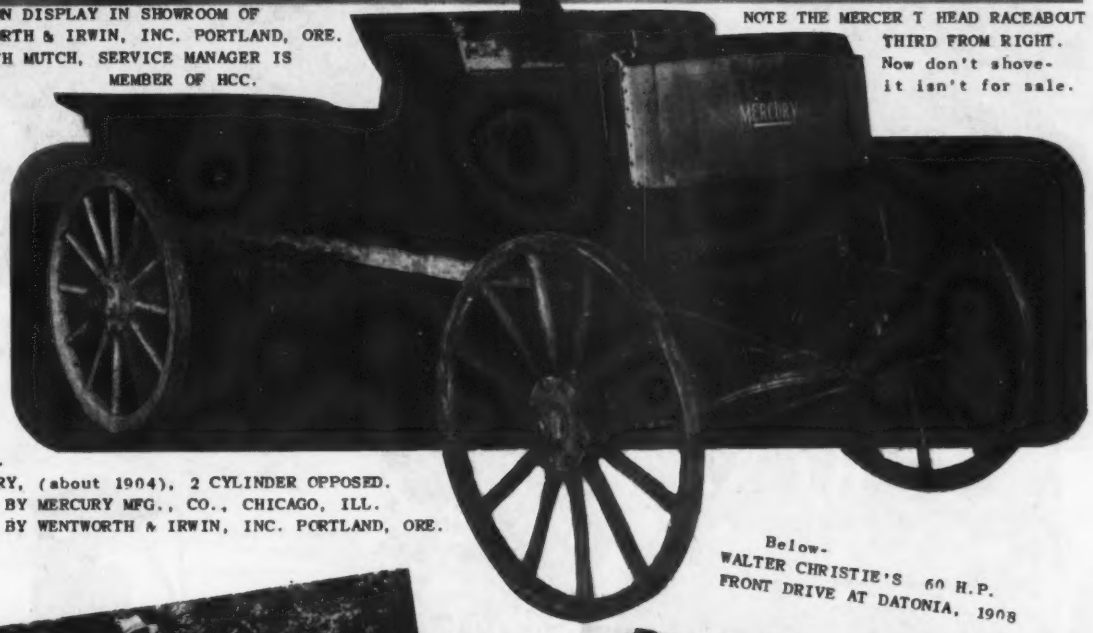
The Logan runabout is of entirely different mechanical design from the truck and light delivery manufactured by them. The engine is a four cylinder vertical, with cast flanges, and rated at 20 horse power; bore and stroke are each 4 inches. All valves are mechanically operated and located in the top of the heads. A fan is mounted in front and driven by a belt from the crank shaft. The inlet and exhaust pipes are all placed upon one side of the engine. Ignition is by jump spark from four coils and a storage battery. The clutch is internal expanding, with metal to metal contact. The drive to the rear axle is by a propeller shaft with a single Cardan joint. A strong sleeve encloses the shaft from the axle to a point near the joint, where it forks and is connected to the frame of the chassis by a huge joint on each prong. The change gear is mounted upon the top of the rear axle, a Hassler transmission being used. The brakes are external and internal, mounted direct upon the hubs. The frame is of pressed steel construction. Steering is by worm and sector. The spark and throttle control levers are mounted upon the top of the steering wheel. Oiling is by force feed, the oiler being operated by a connecting rod attached to one of the inlet valve walking beams. The commutator is driven by bevel gear from the cam shaft and is located on the side near the rear of the engine. The 2 to 1 gears are located outside of the aluminum crank case, but are fully covered by a separate aluminum casing.



REAR AXLE AND SPUR GEAR DRIVE OF ATLAS ONE AND A HALF TON TRUCK.

CARS ON DISPLAY IN SHOWROOM OF WENTWORTH & IRWIN, INC. PORTLAND, ORE. KENNETH MUTCH, SERVICE MANAGER IS MEMBER OF HCC.

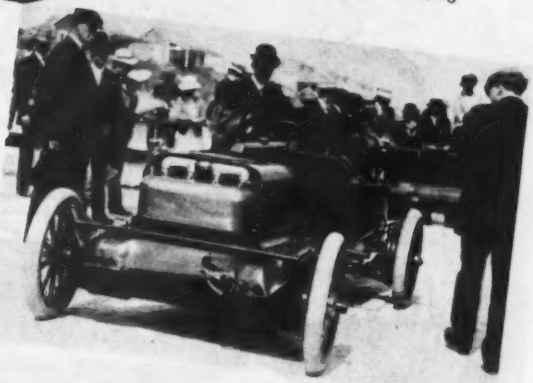
NOTE THE MERCER T HEAD RACEABOUT THIRD FROM RIGHT. Now don't shove- it isn't for sale.

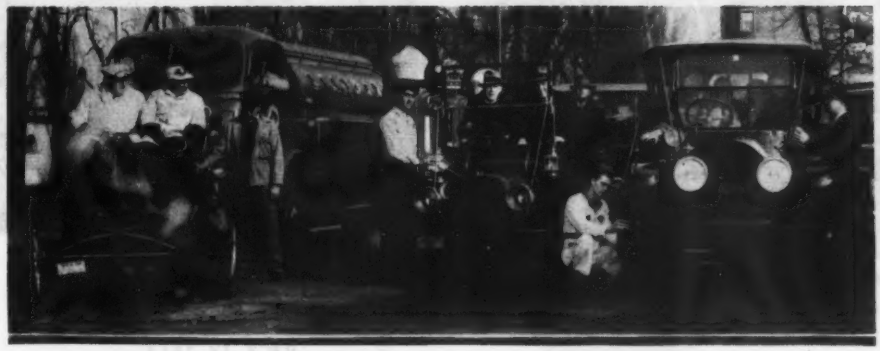


Above-
MERCURY, (about 1904), 2 CYLINDER OPPOSED. BUILT BY MERCURY MFG., CO., CHICAGO, ILL. OWNED BY WENTWORTH & IRWIN, INC. PORTLAND, ORE.

Below-
WALTER CHRISTIE'S 60 H.P. FRONT DRIVE AT DATONIA, 1908

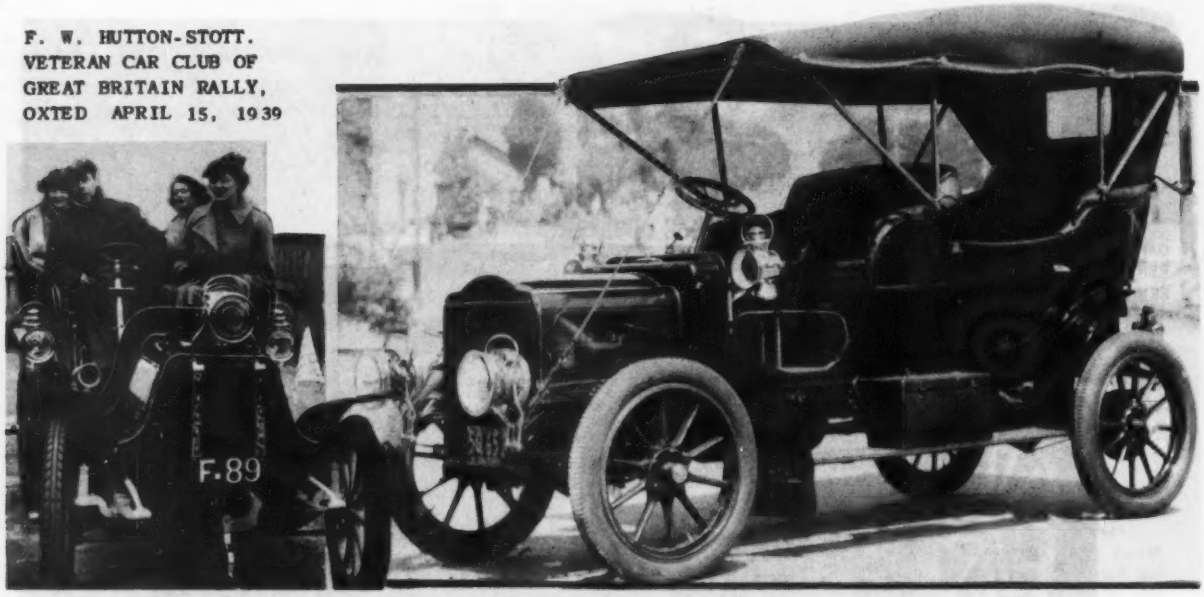
HCC member HEBER O. KOPF, EL PASO, TEXAS, In his INTERNATIONAL HARVESTER CO., TRUCK.



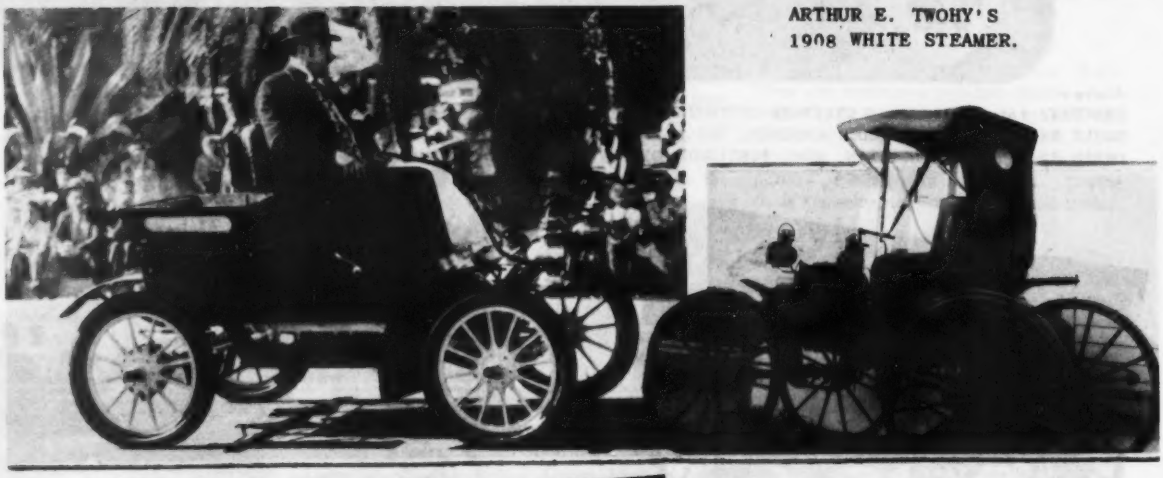


Left - THE DAY BEFORE THE THANKSGIVING CLASSIC IN CHICAGO, 1945. MAJ. LENOX R. LOHR IN 1900 LOCOMOBILE, CHAS. B. KING AND DR. GEO. E. SHAFER IN ONE-CYLINDER CADILLAC FROM THE MUSEUM OF SCIENCE & INDUSTRY, CHICAGO, and JERRY DURYEA, DRIVER OF CADILLAC TOURING CAR.

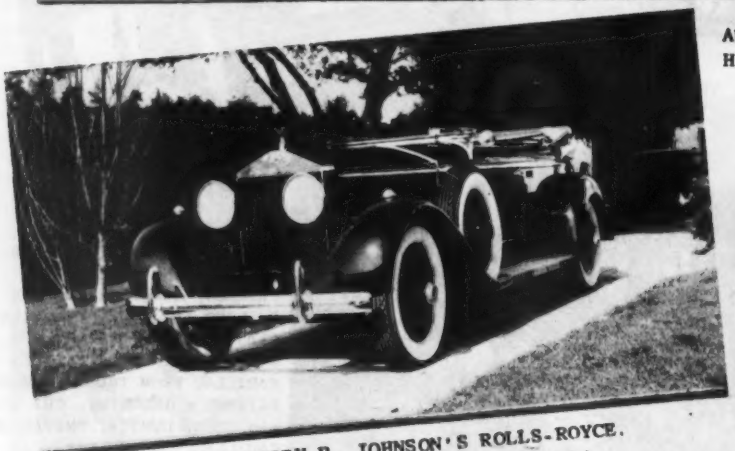
F. W. HUTTON-STOTT.
VETERAN CAR CLUB OF
GREAT BRITAIN RALLY,
OXTED APRIL 15, 1939



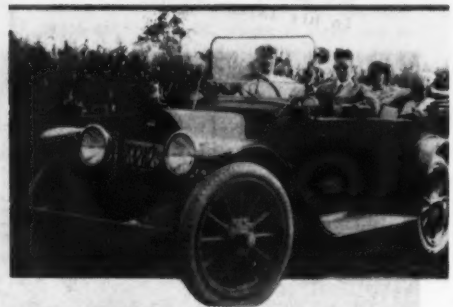
ARTHUR E. TWOHY'S
1908 WHITE STEAMER.



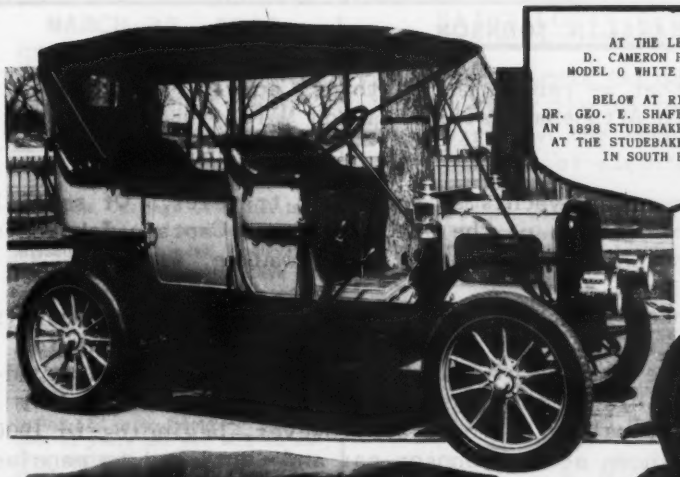
Above at left - DR. GEO. E. SHAFER IN
HIS 1903 OLDSMOBILE. Above - HIS 1906
FIRESTONE-COLUMBUS.



CAPTAIN HARRY B. JOHNSON'S ROLLS-ROYCE.
(Note the modernized front fenders).

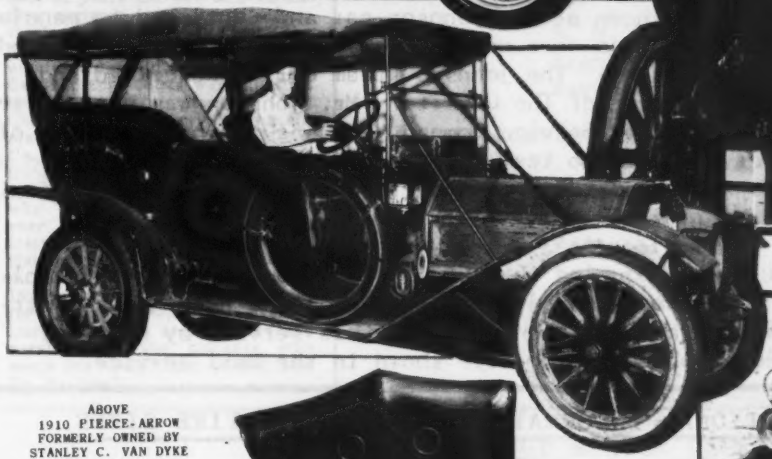


THE YOUNG MAN ABOVE IS OUR
PRESIDENT STEADMAN G. SMITH
DRIVING THE FAMILY MOLINE
BACK IN 1913.



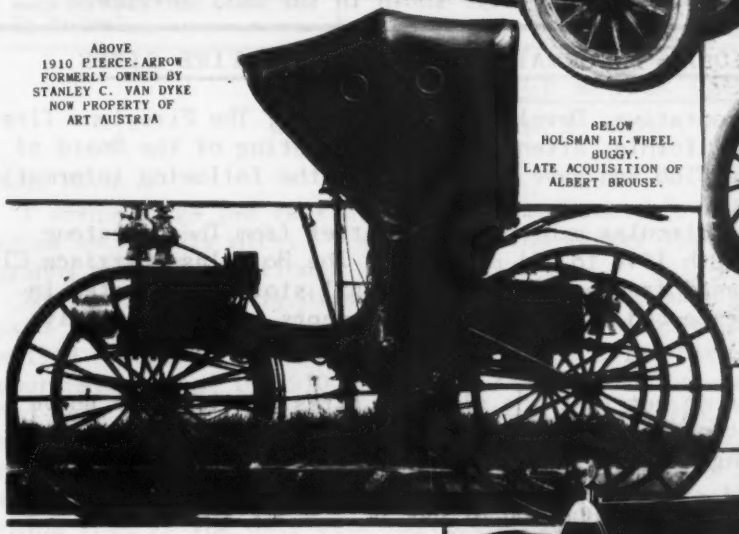
AT THE LEFT
D. CAMERON PECK'S
MODEL 0 WHITE STEAMER.

BELOW AT RIGHT
DR. GEO. E. SHAFER INSPECTS
AN 1898 STUDEBAKER ELECTRIC
AT THE STUDEBAKER MUSEUM
IN SOUTH BEND.

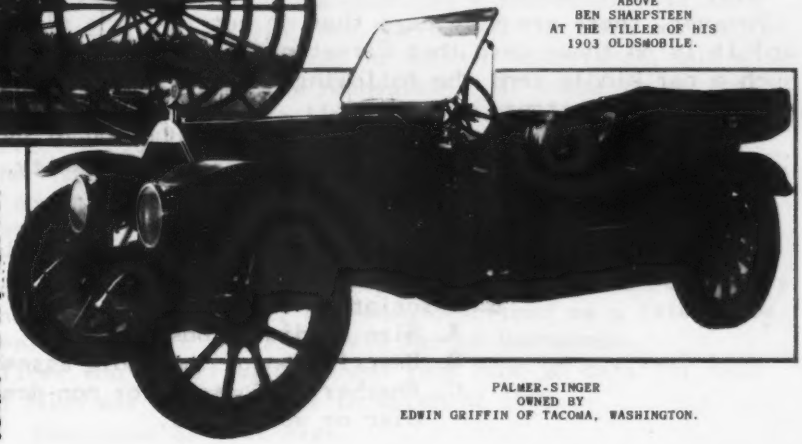


ABOVE
1910 PIERCE-ARROW
FORMERLY OWNED BY
STANLEY C. VAN DYKE
NOW PROPERTY OF
ART AUSTRIA

BELOW
HOLSMAN HI-WHEEL
BUGGY.
LATE ACQUISITION OF
ALBERT BROUSE.



ABOVE
BEN SHARPSTEEN
AT THE TILLER OF HIS
1903 OLDSMOBILE.



PALMER-SINGER
OWNED BY
EDWIN GRIFFIN OF TACOMA, WASHINGTON.

IN THIS ISSUE OF THE GAZETTE ARE THREE
PAGES OF MEMBER'S ANTIQUE CARS.
HAVE YOU SOME GOOD, CLEAR PHOTOS OF
YOUR FAVORITES? SEND THEM TO THE
SECRETARY FOR PUBLICATION.
GIVE YEAR AND ANY OTHER INFORMATION.

PAUL FRANKLIN JOHNSON.

It is with a deep feeling of loss that we report the death of Captain Paul Franklin Johnson who passed away at his home in Altadena, California, on March 19th, 1946, at the age of 71 years.

Captain Johnson was an engineer, inventor, yachtsman and world traveler. Of special interest to those interested in the early days of the automobile are Captain Johnson's activities in connection with the Johnson Service Company of Milwaukee, Wisc.

Paul Franklin Johnson was born October 13th, 1874. He was educated at Massachusetts Institute of Technology and graduated in the class of '98. Following his graduation he went to work for the Johnson Service Company of Milwaukee, which company was founded by his father, Warren S. Johnson. This company was essentially engaged in and at present is engaged in the making of automatic thermostats. However, beginning in 1900 the company manufactured a steam car known as the Johnson car and continued to manufacture both the steam car and later gasoline cars until 1910 at which time they devoted all their energies towards the thermostat. The Johnson steam car is described and pictured on pages 23 and 24 of this issue of The Gazette. Mr. Johnson was very active in the automotive division of the Johnson Service Company and was the owner of one of the earliest cars in Milwaukee. In order to test the steam boilers which were used a launch was procured and boilers were used in the launch to seek out any possible faults and make improvements.

Mr. Johnson was instrumental in introducing the automobile as a method of mail collection. The first such cars being used were Johnson cars and were used at the post-office in Milwaukee. The U. S. Postal Department honored this service by a parcel post stamp on which is engraved a Johnson automobile shown in the mail service.

FIRESTONE ASKS FOR ADDITIONAL INFORMATION ON OBSOLETE TIRE SIZES.

Mr. H. M. Stilley, Special Representative, Development Department, The Firestone Tire and Rubber Company, Los Angeles, California, attended a recent meeting of the Board of Directors of The Horseless Carriage Club and gave the Directors the following information

The tires listed on page 3 of the circular sent out with letter from The Firestone Tire and Rubber Company dated May 28th 1946 to all members of The Horseless Carriage Club are now available and can be purchased from any Firestone retail store. As stated in the circular the sizes listed are expected to meet the requirements of approximately 90% of the antique car collectors.

However, there are some cars that do not take the sizes of tires available as above and it is on these cars that Firestone is asking additional information. If you own such a car kindly send the following information to the Club Secretary and it will be sent to the Firestone Company.

1. Make and year of production of car.
2. Body type and passenger capacity.
3. Curb weight (no passengers).
4. Size of tires and tread design.
5. Type of tires-whether Regular Clincher, Q.D. Clincher, or Straight Side.
6. Description of rims and wheels.
   A. Size or dimensions of rim.
   B. Description of the whole assembly.
   C. Whether demountable or non-demountable, wire, disc or wood wheel.

MARCH 27, 1946.
ST. LOUIS POST-DISPATCH

HORSELESS CARRIAGE CLUB HOST TO AUTO PIONEERS

The St. Louis chapter of the Horseless Carriage Club met last night at the Automobile Club of Missouri, 3917 Lindell boulevard, and recalled the early days of motoring in St. Louis when "Get out and Get Under" was a popular song and a trip to Fenton by automobile was considered a major expedition.

Guests of honor were pioneers of St. Louis automobile manufacturing and sales. George P. Dorris, now 72 years old and still an active engineer, told the horseless carriage enthusiasts about the first automobiles that were manufactured here. The Moon, Darby, Gardner and Dorris were all first built in St. Louis, he said. The Chevrolet was also originally manufactured by the Gardner Motor Co. here, and then sold to the General Motors Corp., Dorris said.

Henry F. Borbein, 81 years old, who built frames and running gear for other pioneer firms attended the meeting along with Herman L. Schnure, who came to St. Louis for the World's Fair in 1904 and stayed on as a salesman for Sam Breadon's old agency. Dorris, Schnure and Borbein are survivors of the pioneers who wrote the book, "Four Wheels and No Brakes."

SAINT LOUIS REGIONAL GROUP ELECTS OFFICERS.

The Saint Louis Regional Group of The Horseless Carriage Club met at the factory of Honorary Life Member, Mr. Geo. P. Dorris on the evening of Tuesday, Feb. 26th, 1946 for the purpose of electing officers for 1946.

A letter was read, from Mr. Harry Rook, Treasurer, stating that due to illness he would be unable to serve in 1946.

The election of officers was then called. On motion by Mr. Dorris, seconded and carried, present officers were retained and the offices of Secretary and Treasurer consolidated. 1946 officers are as follows:

A. H. Deeken - Director.
Frank H. Steward - Assistant Director.
Wayne Bledsoe - Secretary-Treasurer.

The application for membership of Mr. James Austin was accepted.

Mr. A. L. Dyke, veteran publisher of Automotive books, manufacturer of early cars, and one of the first used car dealers in the United States was voted an Honorary Life Member of The Horseless Carriage Club.

WAYNE BLEDSOE - Secretary.

THE TRUTH ABOUT MERCER RACEABOUTS.

A letter from SAMUEL E. BAILY, Philadelphia.

Dear Herb: -

I acknowledge the receipt of your new "Gazette", and in looking it over quickly it seems to be very nice. I approve of the larger type and the increased number of photographs and illustrations.

However, I was very disappointed to see the Busby "35-C" on the front cover described as a 1910, particularly when so many of the members, including yourself, know that it is a 1912 raceabout and does not resemble the 1911 which had as you know flat fenders like your Marmon. And in 1910 the Mercer Company did not manufacture a raceabout. If this had been inaccurately described as a 1913 or a 1914 then there would be some excuse for the mistake as the '12's, '13's, and '14's were similar in outward appearance, but showing this 1912 car and calling it a 1910 is obviously impossible. It seems to me that someone is trying to appear to be more than they really are by claiming to have something that if the date were correct would be more desirable, but in this case it is ridiculous to those of us in the know as Mercer made only a speedster in 1910 which was high and equipped with a large cowl. I think that such photographs used on the cover of your publication should be accurately described as to year of manufacture or year model, as the predating of such illustrations is a reflection upon the editors of the publication and is also detrimental to the owner of the vehicle as a 1912 "35-C" Mercer Raceabout is a very nice car and a desirable model, but when described as a 1910 it becomes a nonentity, as there never was such a car as a 1910 Mercer Raceabout.

I am always amused at the fellows who advertise 1907 and 1908 Hupp 20 cars for sale when we all know that the first Hupp was manufactured in March of 1909.

Continued on next page.

(A letter from Samuel E. Bailey, Continued)

Also, I note in your most interesting description of your Marmon that you refer to PARKER'S "T" head Mercer engine. Please be reminded that FINLEY ROBERTSON PORTER was the name of the designer of the "T" head Mercer engine and not PARKER. Such obvious errors to me are inexcusable as they reflect a lack of knowledge on the part of the editors which I am sure does not exist. I recognize that it is extremely hard to put out a publication without mistakes such as the 9 cylinder Packards described in the last issue of "The Antique Automobile", but this was clearly a mistake made by the printer. Nevertheless, it should never have occurred.

Cordially yours, Sam,

(Editor's Note) Thanks a lot Sam. Now we are all straightened out on everything with the possible exception of that 1903 Mercer mentioned on page 31 of the January, 1946, issue of a certain old car club publication. (Just goes to show that the best of us make mistakes).

OUR NEW MEMBERS.

Thomas M. Galey, Box 544, Owensboro, Kentucky. Owns large collection of photographs taken during the early days of the automobile. Prints of these pictures can be had by writing to Albert Mecham, 140 Michigan Ave., Highwood, Illinois. Mr. Galey was first boy to own his own American made commercial gasoline carriage. It was a Winton and delivery date was April 2nd, 1900. Mr. Galey's father-in-law, Mr. L. S. Dow, organized the National Automobile Co., in Indianapolis.

Knox Farrand, 322 So Windsor Blve., Los Angeles 5, Calif. Attorney. Interested in early automobile literature.

Robert F. Ruemeli, 11 Ridgetop, Richmond Heights 17, Mo. Owns 1918 Saxon 6 Roadster. Interested in Literature and Pictures.

Henry C. Carpenter, 8052 Davis Dr., Clayton 5, Mo. Deals in Real Estate and new Foreign makes of automobiles. Owns Wolseley 6 cylinder, 14 H.P. Roadster. Interested in literature and pictures.

Charles B. Richmond, 4564 Finley Ave., Los Angeles 27, California. Interested in scale models of antique automobiles. Please write to Mr. Richmond if you are interested in this phase of our hobby,

A. L. Dyke, 406 Market Street, St. Louis 2, Mo. Elected an Honorary Life Member of the Horseless Carriage Club at Board of Directors Meeting April 5th, 1946, in recognition of his work during the early days of the automobile. Publisher of Dyke's Automobile and Gasoline Engine Encyclopedia, and inventor of many early automotive devices.

Duane Trudeau, 10039 Sand Point Way, Seattle 55, Washington. Owns 1908 Stevens-Duryea four-cylinder Sedan. Now in the U. S. Navy.

Albert Trudeau, 10039 Sand Point Way, Seattle 55, Washington. Lumber yard owner. Owns 1908 White Gasoline Sedan.

Eugene Lajunie, 169 S. Greenwood Ave., Pasadena 8, California. Automobile Mechanic.

Russell E. Johnson, 1211 N. Western Ave., Los Angeles 27, California. Auto Paint & Body Shop owner. Has 1923 Ford 4 door Sedan.

C. E. H. Whitlock, Sperry Road, Bethany, Conn. Book Dealer. Owns early Reo Roadster, five Fords from 1911 to 1924, Buick 1927 Coupe and Buick 1928 Sedan. Interested in Literature, Radiator Ornaments and Pictures.

OUR NEW MEMBERS.

Earl W. Gault, 1315 5th St., Lorain, Ohio. Owns about 22 antique cars including a 1898 Geneva Steamer, 1901 White Stanhope Steamer, 1902 Locomobile Steamer, 1911 Oldsmobile Limited, 1908 Northern 2 cylinder, 1911 Lozier, 1902 Oldsmobile Curved-dash, etc. Besides automobiles Earl is interested in Literature, Lamps and Horns. This is a re-instatement as Earl was a member of HCC before the war.

D. C. Wilson, 1270 Commercial Trust Building, Philadelphia, Penna. Vice President of the Antique Automobile Club of America.

Robert C. Lea, Jr., Croton Road, Wayne, Penna. Treasurer of the Antique Automobile Club of America.

John R. Bair, 127 Moscow St., Playa Del Rey, California. Consultant, Industrial and Labor Relations. Interested in antique automobile literature and pictures.

William W. Willock Jr. Syosset, New York. Owns 10 antique cars including 1910 Maxwell, 1911 Ford, 1913 Detroit Electric, 1913 Stanley Steamer, 1905 Stanley Steamer Roadster.

B. M. Peterson, Box 636, Patterson, California.

David W. Fortune, Olive Hill, Kentucky. Interested in Literature, Emblems, and Pictures. Also Speedometers of which he has a nice collection.

George P. H. Riggs, 2204 Marathon Street, Los Angeles 26, California. Interested in Literature and Pictures. Ambition is to own a 1922 Premier with C-H Electric gear shift, or a pre-1920 Pierce Arrow.

J. Milner Smith, 2215 N. W. Miami Ct., Miami, Florida. Owns Cadillac 1910 Touring and two early Model T Fords.

Glen J. Hughes, 221 North Olive, Rialto, Calif. Owns 1919 Ford Sedan.

Walter Bittner, 1002 W. Washington, Bloomington, Illinois. Owns 1909 Studebaker Electric two Fords, 1913 and 1914, and two 1914 Saxons.

Herbert Restetsky, 7113 South St., Maplewood 17, Mo. Owns and drives every day the best preserved 1918 Dodge Touring in existence. Bought car new and has saved every license plate he has purchased for it from 1918 to 1946.

C. B. Snyder, 4982 Berthold Ave., St. Louis 10, Mo.

J. L. Parkhurst, Box 256, Route 1, Chandler, Arizona.

John R. Kuhns, 427 W. Fifth Street, Los Angeles 13, Calif. Interested in Literature and pictures.

Richard L. Hempel, 4501 Madison, Kansas City 2, Mo.

Stanford S. Block, 1706-14 Washington St., Kansas City 8, Mo.

V. J. Sala, Oakland, California. Now overseas with U. S. Army. Owns 1912 Winton 6 Touring.

Walter Tillstrom, Ivy Service Station, Gresham, Oregon. Owns 1909 Maxwell two-cylinder 1910 Chalmers Touring, 1914 White Gasoline Touring, and 1914 Ford Roadster.

OUR NEW MEMBERS.

Thomas C. Parramore, Main St., Winton 3, North Carolina. Interested in Literature and Pictures. Wants information on Steamers.

Fred Hoyle, c/o The Diamond Silver Co., Lambertville, New Jersey. Owns 1904 Oldsmobile Curved-Dash which is being reconstructed in the shop of Mr, Geo. C. Green.

Victor G. King, 1525 Cahuenga Blvd., Hollywood 28, Calif. Sound Equipment Manufacturer. Has 1925 Rolls Royce.

Henry C. Wing, Jr., 62 Pierce Street, Greenfield, Mass. Owns 1913 Stanley Roadster, and 1937 S. S. Jaguer Sports Roadster. Well known member of The Veteran Motor Car Club of America.

Robert Graham, 1443 Jefferson, Kansas City, Mo. Owns 1916 Cadillac Roadster.

L. W. McConnaughey, Russellville, Ohio.

R. D. Crane, 61 Harris Ave., Battle Creek, Michigan. Owns Brush Runabout in which Mr. Louis Combs, HCC Director, rode in the Detroit Golden Jubilee parade.

Gordon A. Blaine, 1820 Lawrence Ave., Toledo, Ohio. Owns Sears Buggy and 1909 Ford.

Carl Magnee, 15439 Schoolcraft, Detroit 27, Michigan. Studebaker dealer in Detroit. Former Indianapolis "500" racing car owner. Interested in pictures and 35 mm Kodachromes of racing cars and events.

Harry Burke, 1721 Chestnut St., Philadelphia 3, Penna. Interested in Literature, Lamps, Emblems, Horns and Pictures.

C. O. Sorrell, 1605 No. Green, Kirksville, Mo.

Saul Bashin, 2010 Judson St., Los Angeles 33, California. Owns 1906, 1912 and 1914 Fords. Also 1909 Whiting and 1910 IHC Truck.

Frank E. H. Johnson, 8 Grove Hill Ave., Newtonville 60, Mass. Automotive Engineer. Owns Buick 1912 four-cylinder Roadster. Interested in Literature, Lamps, and Horns.

Elmer J. Norbury, 645 N. Pass Ave., Burbank, Calif. Toolmaker. Has 1922 Ford Coupe and 1923 Ford Roadster.

J. P. Pinnery, 4030 S. Michigan St., South Bend, Indiana. Literature, Emblems & Pictures

---

FOR SALE.

1919 Dodge Sedan in good condition, $225.00. Four extra 33x4" tires, 2 brand new, 1 re-cap, 1 not quite smooth, $25.00 for all four or will sell separately. Dodge parts - fit 1917 to 1924 models including engine, transmission, differential, radiator, headlamps, steering gear, etc ($50.00 complete. Will sell car, extra tires and parts complete for $275.00. John E. McGuire, 1402 S. Catalina St., Los Angeles 6, California.

Several pair of brass gas headlamps. Several pair of brass side oil lamps. Several bulb horns complete with tubes reeds and bulbs. Old type Klaxon electric horn, motor under horn. Hand Klaxons. J. E. Vanderveer, 26 Emerson St., Kingston, New York.

Sell or trade all or any part of a 1934 Sentinel Coal burning truck. Baker Truck Boiler, Part payment on Doble Steamer. R. G. McCord, 529 66th St., Oakland 9, California.

FOR SALE.

Set of 15 Postcard pictures of Antique Automobiles. Price $1.00 Per Set. Order from Herbert Royston, P. O. Box 503, West Los Angeles 25, California.

Obsolete size tires. Straight side and clincher. Also pre-war heavy duty tubes. Send for complete list. Parts for Reo Model R and up. Joseph Weider, 403 E. 10th St., New York City, N. Y.

Model Kits, Greyhound Super Cruiser Bus, 18½" long, $4.25. Intra City Bus, 20" long, $3.75, 12 Auto Magazines, my choice, $1.00. Have Horseless Age, Motor, Etc., Also Instruction Manuals. Edward A. Moran, 3629 Oxford Ave., Riverdale, New York c

Brass horns. Good condition. No tubes bulbs or reeds. $15.00 each. Steward E. Cole, 1345 N. Vista St., Hollywood 46, California.

Binoculars. German 7x30. Retina 35 mm f 3.5 Camera. Will trade for antique auto. R. W. Hardacre, 984 4th Ave., Los Angeles 6, Calif.

Tires. 34x4" and 30x3". A number of old cars for sale or trade. Shown by appointment only. Art Austria, 3714 Stewart Ave., Venice, California.

Brass Lamps and horns. Also several old cars. For full information see ad in March 1946 Gazette on Page 33. Arthur E. Twohy. 400 No. Kenmore Ave., Los Angeles 4, Calif.

Photos of old time racing events and early automobiling, Write for complete list and prices. Albert Mecham, 140 Michigan Ave., Highwood, Illinois.

Rare magazine. Reprint of April 21, 1906 issue of The Journal of the American Medical Association. Many pictures of early cars. Price 75¢. Send order to Herbert Royston, P. O. Box 503, West Los Angeles 25, California.

1900 DeDion and 1900 Panhard Clement (hot tube ignition). Henri Girod-Eymery, 2, Rue de Poissy, 2, Paris-V, France.

WANTED.

Roadster top, of a set of Roadster top bows. Herbert Royston, P. O. Box 503, West Los Angeles 25, California.

Automotive boiler feed pump to 1000 Lbs., pressure. Bryan steam tractor boiler and engine. Case automobile, prefer 1913 or earlier. Steam car literature and instruction books. Information leading to present builder of boiler suitable for automotive use. Ted Middleton, 1019 No. Broadway, Aberdeen, Washington.

Radiator for a Model N Ford. (With water pump mounted in radiator). Ben Sharpsteen, 2324 Panorama Drive, La Crescenta, California.

Pair of 1912 Michigan License Plates. Also a script Duryea emblem. Everell Fisher, 2601 Fisher Building, Detroit 2, Mich.

Saxon 4 cylinder, 3 speed roadster, or any parts for same. Forrest B. Doughty, Fayette, Iowa.

Ring Gear and Pinion of 4 cylinder Essex. Art Austria, 3714 Stewart Ave., Venice, Cal.

Instruction Manual, Catalogues and other descriptive literature for Rolls-Royce, Silver Ghost and Phantom I Models. Henry F. Cate, Jr., 130 Temple Street, West Newton 65 Massachusetts.

WANTED.

Touring Cars and Sports Cars prior to 1925. No Fords. Edward A. Moran, 3629 Oxford Ave Riverdale, New York.

30x3 and 30x3½ Tires and Tubes. Melvin Fray, 3403 N. E. 32nd Place, Portland 12, Ore.

All or any part of Stanley Steamer Model SV 262. Pay in cash or catalogues for bona fide information leading to purchase. R. G. McCord, 529 66th St., Oakland, 9, Calif.

Franklin Touring car, 1909 or 1910. J. E. Vanderveer, 26 Emerson Street, Kingston, N. Y.

Want racing car Photographs. Old or late. Interested in securing entire collections. What have you? Josef Reutershan, 222 Paulison Ave., Passaic, New Jersey.

Will trade 35 mm Kodachrome of Roscoe "Fatty" Arbuckle's Custom Built Pierce "66" 1918, for a 35 mm Kodachrome of your antique or unusual car. Herbert Royston, P. O. Box 503, West Los Angeles 25, California.

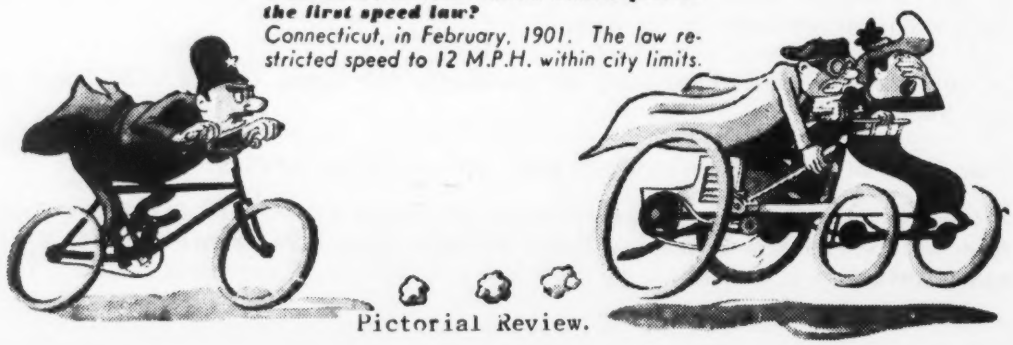
WANTED. New members for The Horseless Carriage Club. If you know of anyone interested in this Horseless Carriage Hobby send his name to Herbert Royston, Secretary, P. O. Box 503, West Los Angeles 25, California. An application for membership blank showing your name as sponsor, and a copy of The Gazette will be mailed immediately.

LOST, STRAYED OR STOLEN DEPARTMENT.

Mail addressed to the following members has been returned marked "Gone - Left no forwarding address". Information leading to the correct address of any of these individuals will be greatly appreciated. Send information to the Club Secretary,

NAME	PREVIOUS ADDRESS.
Herbert F. Gunnison,	729 Gladstone Ave., Baltimore 10, Md.
W. Allin,	2834 Denby Ave., Los Angeles 26, California.
Orin Thorkildsen,	9535 Otis St., Southgate, California.
Oliver D. Siberell,	c/o Andrew Bright, 110 N. Central, Glendale, Calif.
L. S. Crewe,	2450 Townsend Ave , Detroit 14, Mich.
A. Chas. Draper,	745 Guadalupe Dr., Upland, Calif.
Earl Stimson,	1923 Arlington St., Los Angeles, Calif.
Lt. Comm. R. B. English,	U.S.S. Jason, c/o Fleet P. O., San Francisco, Calif.
O. William Smith,	P. O. Box 226, Maywood, California.
Wm. John Rothnie,	18439 Burbank Blvd., Tarzana, Calif.
Gage D. Burr,	Ellyson Field, Pensacola, Florida.
Ralph L. Follett,	1736 No. McCadden Pl., Los Angeles 28, Calif.
Roy O. Reime,	372 Parkside, Upland, California.
Lee E. Thorn,	Cowie Elect. Co., 230 W. Topeka Ave., Wichita 2, Kansas.
Frank E. Kane.	20361 Arminta St., Canoga Park, California.
L. D. Jacks,	3652 Walnut Ave., Lynwood, California.

Which one of the United States passed the first speed law?
Connecticut, in February, 1901. The law restricted speed to 12 M.P.H. within city limits.



Pictorial Review.